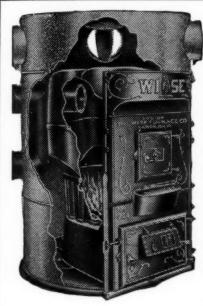
Engineering Library Stories of Michigan Sheet Metal Contractors' Outing and Pennsylvania Sheet Metal Convention in This Issue.

# AMERICAN/ARTISAN Taroware Record

Vol. 84. No. 5.

620 SOUTH MICHIGAN AVENUE, CHICAGO, JULY 29, 1922.

\$2.00 Per Year.



# It's the <u>Wise</u> dealer who sells good furnaces

THE constant din of the words "Service" and "Satisfaction" has been so great that in many instances their meaning has been lost.

Your customers are your neighbors — your prospects are neighbors to your customers. A customer will either praise you and the warm air heater you sold him or he will kill a lot of sales for you.

Wise Furnaces are GOOD Furnaces.

WISE PIPE and PIPELESS FURNACES LESS FUEL - MORE HEAT

it is an undeniable fact that the success and growth of any business rests solely upon the carrying out of the meaning of the words "Service" and "Salisfaction."

But, taking it for granted that every business has a profit making policy for its foundation, in order to exist at all,

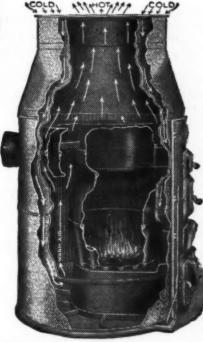
We have a 17 year old policy that says Wise Furnaces must be

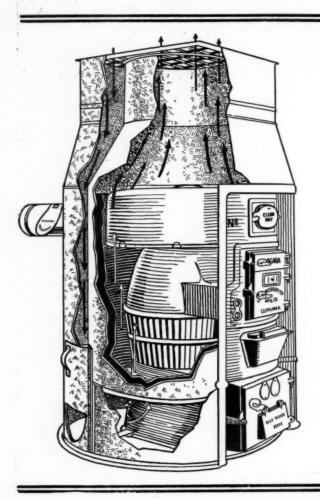
quality heaters and give Service and Satisfaction.

They are priced to stimulate sales for you NOW and they have many practical features for which they are famous.

A post card request brings full agency details or if you desire, our salesman will call on you.

WISE FURNACE CO. AKRON, OHIO





# NIAGARA PIPELESS FURNACES

Saves one-third of the fuel.

A super-heater.

Burns any kind of fuel.

Durable, efficient, and more than economical.

Write for catalogs, prices and terms.

Made by

THE FOREST CITY FOUNDRY & MANUFACTURING CO.

1220 Main Avenue

Cleveland, Ohio

One of the oldest manufacturers of furnaces in the United States.



# **FURNACES**

FOR

### **EVERY PURPOSE**

TO BURN ALL KINDS OF FUEL

At Prices to Fit Every Sized Pocketbook



NESBIT, WEIR, AND PEERLESS-GRAVITY PIPELESS FURNACES MEET ALL DEMANDS FROM YOUR CUSTOMERS

HANDY PIPE AND FITTINGS

ROCK ISLAND HART & COOLEY

ISLAND CITY and MAJESTIC DUPLEX

REGISTERS

WOOD FACES-COAL-CHUTES-GARBAGE RECEIVERS

Up-to-date furnace installers want complete furnace service and our dealers say we do just this and then some.

STANDARD FURNACE & SUPPLY CO.

**OMAHA** 

SIOUX CITY

Thoroughly Covers the Hardware, Stove, Sheet Metal, and WarmAirHeatingand Ventilating Interests

# AMERICAN ARTISAN Hardware Record

Address all communications and remittances to AMERICAN ARTISAN AND HARDWARE RECORD 620 South Michigan Avenue CHICAGO, ILLINOIS

PUBLISHED EVERY SATURDAY BY THE ESTATE OF DANIEL STERN

Eastern Representatives: C. C. Blodgett and W. C. White, 1478 Broadway, New York City

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Vol. 84. No. 5.

CHICAGO, JULY 29, 1922.

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### IS COMPETITION THE LIFE OF TRADE?

At the recent meeting of the National Association of Manufacturers much time was given up to discussions as to means by which competition might be curbed.

The same subject has been discussed by hundreds of other business organizations—and always the view had been expressed that "the other fellow" is the one who by his unfair methods is making business life hardly worth living. It is a rare case when admission is made by any one of those present that by a bare chance some of his methods might be open to criticism.

When two men want the same thing there is bound to be competition and it depends on both as to whether that competition is to be fair or unfair.

If I want the thing you want and want it badly enough to pay any price for it you are bound to lose out, and most likely you will say that I have used unfair means to secure the thing you wanted—for which I cannot justly blame you, because most likely I was able to take advantage of some particular condition or circumstance which might not have presented itself to you.

For these reasons there is comparatively little use in discussing competition from that angle in a convention, and usually when that angle is discussed the air becomes blue with recriminations.

There are, however, many other factors of competition which lend themselves to constructive discussion, such as the development of new business, the finding of new uses for the same article, the introduction of new models and types, the extension of territory covered, etc.

The rendering of a specific service in connection with the solicitation of new trade is one of the most productive means of securing additional sales, and it always pays out.

Competition on a mere price and term basis is the lowest form of competition and usually results in little or no lasting benefit to either buyer or seller, because with the "shaving" of the price, there always goes a tendency to "skin" the quality, as exemplified in the 29 and 30 gauge gutter, the skimped weight in stoves or furnaces, the use of inferior material, etc.

That sort of competition never was and never can be the life of trade. Sooner or later, those who indulge in that kind find themselves classed as concerns from which only "cheap" and unreliable merchandise can be expected, and while there may always be some who will be attracted by a low price or "extra five" off, the great majority of the purchasing public prefers to buy from concerns whose names stand first for quality, second for service and third for price.

The latter class is composed of the real exponents of the doctrine which has as its motto
—"Competition is the Life of Trade."

Competition which is based on quality and service rather than on price, builds up, while competition on a mere price basis is always destructive.

# Random Notes and Sketches. By Sidney Arnold

FRANK E. EDERLE, secretary Michigan Sheet Metal and Roofing Contractors' Association helps soften the hardships of the current railroad strike with this tale.

"One day," said he, "I was waiting for a train. One hour, two hours, three hours passed, but no train. Just as I was about to make arrangements for a vehicle to drive me to the next town, the station agent said:

"I wouldn't go to that trouble, sir. That train will be along soon now."

"What makes you think so?"

"Well," he said, "I'm pretty certain it will. Here comes the conductor's dog now."

Dave Zweifel was in need of a shave the other morning before going to the Chicago Hardware Picnic. He chose the least dangerous looking barber in the shop, but while the latter was plying the razor he suffered untold agonies.

"Shall I go over your face twice?" asked the tonsorial expert of his infuriated patron.

"Is there enough face there to make it worth while?" demanded Dave in return.

Louis E. Swane, who sells Culter & Procter stoves, ranges and furnaces in Wisconsin, sends me the following good story:

In the arid belt, a traveler met a farmer hauling a load of water.

"Where do you get the water?" asked the tourist.

"Up the road bout seven miles."
"What! You haul water seven miles for your family and stock?"
"Yup."

"Why in the name of common sense don't you dig a well?"

"Heck!" snorted the farmer.
"What's the use? It's just as fur
one way as 'tis 'tother."

I enjoyed a visit this week from

Jules Gerock of Gerock Brothers Manufacturing Company, St. Louis, Missouri. He has recently returned from an extensive trip through the Southwest and reports business conditions greatly improved.

In a Detroit, Michigan, police court the other day the following significant incident occurred, according to a report received from N. L. Pierson, Jr., of the Detroit office of the American Rolling Mill Company:

"Your wife says you have her terrorized."

"Honest, Judge-"

"I do not ask you this in my official capacity, but as man to man. Do you understand?"

"Yes, your Honor."

"What's your secret?"

Here is an Abraham Lincoln story which is new to me. It comes from C. F. Nason, Grand Rapids, Michigan, sales representative Milwaukee Corrugating Company and vice-president Michigan Auxiliary:

"This being President isn't all it is supposed to be, is it, Mr. Lincoln?" said the visitor.

"No," Lincoln replied, his eye twinkling for a moment. "I feel sometimes like the Irishman who, after being ridden on a rail, said 'If it wasn't for the honor av th' thing, I'd rather walk."

Ralph Blanchard, manager Chicago office of Hart and Cooley Company, tells about a lady and her little daughter who were walking through a fashionable street when they came to a portion strewn with straw, so as to deaden the noise of vehicles passing a certain house.

"What's that for, mamma?" said the child.

The mother replied, "Why, the lady in that house has had a little

baby girl sent her."

The child thought a moment, looked at the quantity of straw, and said, "Awfully well packed, wasn't she, mamma?"

\* \* \*

"Bill" Lewis, Chicago manager for the Yale & Towne Manufacturing Company, was good and sore when he returned the other day from his vacation, for not only did he fail to catch any fish, but the food in the hotel he honored with his presence was not to his liking, and the management seemed not to care whether he did or not.

As an example, "Bill" told this "actual" fact: The colored waiter had served him with some liquid dish in a soup plate. Asking the waiter what it was supposed to be, he received the reply that it was chicken soup. Not satisfied with the information he spoke to the head waiter, making the remark that he could not tell whether it was chicken soup or clam chowder, whereupon the lord of the dining room deigned to answer:

"Could you not tell by the taste,

"No," said "Bill."

"Then what difference does it make?"

Harry Miller, of the Summit Stove Company, had a couple of neighbors while he lived in Chicago, both of whom were rather "sharp" when it came to looking out for their own interests.

One of them was a lawyer and next door there lived a retired sea captain. The two had been on bad terms for some time.

One windy night the lawyer was startled by hearing a terrific crash above him. Investigation showed that the captain's chimney had blown down and created havoc with the attorney's roof. Hastening to the library and hauling forth his law books, the latter had his case well in hand, when there arrived a note from the captain, reading:

"Sir: If you don't return my bricks at once I shall put the matter in the hands of my counsel."

# If People Go to Furniture and Department Stores for Oil Stoves, Growling About It Won't Bring Them Back.

They Go Where They Are Asked to Go through the Invitation of Printed and Spoken Salesmanship Which Is Cordial and True.

G ROWLING about your customers' going to the furniture or department store for the purchase of oil stoves is bad for your digestion.

It does not put you in a pleasant mood for greeting people who come into your place to buy nails or saws.

Moreover, growling has no effect in bettering the condition of your bank account.

The growling is likely to raise your blood pressure and, thus, interfere with the clearness of your thinking.

You become querulous, quick tempered, impatient, and, in consequence, you lose some of the geniality which helps you hold your trade.

The mere fact that you have oil stoves in stock is no reason why people should come to your store to buy them.

Most folks go where they have been asked to go.

Therefore, instead of becoming irritated when you find that people are going to furniture and department stores for the purchase of oil stoves, you should bestir yourself and ask them to come to your store for these goods.

In other words, you should advertise to the people in a courteous, friendly, and instructive way that you have in stock just the right kind of oil stoves which will give them service, convenience, and comfort.

The fact that you are in the hardware business is in your favor in competition with the furniture and department stores.

As a rule, people know that the hardware dealer is a man of expert knowledge, and in many instances, also a skilled mechanic.

In the average hardware store they have the advantage of dealing personally with the owner.



The New Perfection Oil Range with the Superfex burner is meeting the heartiest welcome of any stove we have ever sold.

Its clean, odorless, superheat meets the demand every housewife has desired from an oil stove.

No generating. It jumps to its full heat instantly.

The black porcelain top, the white porcelain backed cabinet, the strong, sturdy construction, insure years of service.

COME IN and SEE IT BURN



Dealer's Advertisement in Emporia, Kansas, Times.

MARKET PART OF ALL

sern! story or fi bil.

This is not true of the department store nor of the hig furniture store where customers come in contact only with clerks who have a more or less—chiefly less—interest in the welfare of the business.

These clerks for the most part do not care a hurrah in Mesopotamia whether the oil stove which they sell gives satisfaction or not.

It does not make any difference to them when pay day comes around how many persons have derived satisfaction from their purchases.

They never hear anything about the complaints, which go to a department outside of their part of the store.

But the hardware dealer who sells oil stoves is in direct relation with his customers.

He is willing to follow up the sale and to correct any imperfections of operation which may result from unfamiliarity with the mechanism of the stove.

Having all these advantages, the hardware dealer is in a position to invite people to come to his place to purchase oil stoves because he is equipped to give them full personal values in addition to the material values of the commodity which he sells them.

When, therefore, you invite people to come to your store to buy oil stoves, do not be backward in telling them about what you are prepared to do for them in connection with the purchase.

In your advertisements tell them about the oil stoves and add to the descriptions some suggestion of the personal service, skill, and experience which are sure to enhance the value of the stoves to the customer.

Don't grumble. Advertise, instead.

Get one or more good lines of qualities you can rely on and then proceed to tell the people all about them.

In the advertisement of The Haynes Hardware Company, reproduced herewith from the Emporia Times, Emporia, Kansas, you get a pretty good idea of some of the things which you ought to say

about the oil stoves which you advertise.

There are two especially strong paragraphs in this advertisement, namely, the second and third.

When the housewife buys an oil stove, she wants one which is clean and odorless.

Moreover, for some people there is an advantage in having an oil stove which requires no generating.

The stove advertised by The Haynes Hardware Company is described as jumping to its full heat instantly.

You can take the line or lines of oil stoves which you handle, study the virtues peculiar to them, and pick out one or two or more striking features for emphasis in your advertisements.

Then, be sure to get in a few words about the spirit of your store, its friendliness, and the sincerity of its willingness to give satisfaction to the people who buy there.

### Well Known Stove Expert Dies in Michigan.

While still in the prime of life, Clayton L. Torrey, assistant general manager of the Round Oak Stove Company, Dowagiac, Michigan, died there Monday, July 24th, of heart trouble.

He had been ill only 24 hours when the end came.

Because of his unusual knowledge of trade conditions, both from the manufacturing and the merchandising side, he had gained a wide reputation as an expert in the stove and furnace industry.

His willingness to oblige, his patience and good nature, together with his exceptional ability, made for him friends in all walks of life.

He is survived by Mrs. Torrey, his children, Lyle, Kent, Harold, and Helene, students at the University of Michigan, and Harriet, who has just finished high school.

Mr. Torrey was only fifty years of age, and his passing away is mourned by scores of business and personal associates.

The atmosphere of a store reflects the personality of the heads.

### Sale of Stove Is Not Completed Till It Gives Satisfaction.

Sales are the seed of other sales. Hence, they require cultivation and the good soil of satisfaction in which to grow.

Particularly is this true with regard to the sale of stoves.

One disgruntled buyer can work more harm to your trade than a dozen pleased customers can overcome.

A southern hardware dealer relates a case which illustrates this lesson very well.

He tells about a complaint received by a stove manufacturer that one of his large ranges was not giving satisfaction at all and the lady using it had almost ruined its reputation in the town in which she lived and had prevented many sales of the range.

The merchant who sold her the range insisted that he had been to see the range and that everything was working perfectly, that the flue was large and unobstructed and that the range had been working perfectly until a few weeks before.

The factory sent a man to this town to see the range in question and he took it down and set it up out of doors in the lady's back yard.

Before building a fire in it, he stuck the soot rake into the extreme back of the bottom flue. It struck something hard and no pulling or shoving would dislodge the obstruction.

Finally he secured an iron rod with a sharp end and after much poking and jamming, he got out a hat full of mortar.

What had happened?

Some three weeks prior to this, a new chimney had been built on the kitchen and the brick layer allowed this mortar to drop down into the range flues and there it stuck and dried into a hard mass which, of course, prevented the range from drawing and from heating properly.

After this mortar was removed the salesman built a fire in the range and in a few minutes was exhibiting some beautifully browned biscuits.

# It Is Unnecessary to Call in Census Experts to Count the Hardware Men Who Are in Business Only for Health.

A Combination of Profit, Health, and Pleasure through Service Can Be Made Effective by Carefully Planned Policy of Publicity.

N<sup>O</sup> United States census enumerator is required to count the number of hardware dealers who are in business solely for their health.

Profit is the main motive of the overwhelming majority of retailers.

But profit is not inconsistent with the pleasure which comes from service.

The greater your profit, the more service you are likely to render and, consequently, the more intense is the benefit which you derive from your business.

Hence, there is good reason for finding the stimulus which will enable you to put forth steadier and more concentrated efforts for the betterment of your income.

In order to do your best and, therefore, to achieve an increasing measure of success, you need the tonic of motives other than that of mere profit.

Men who have the biggest stores, the largest number of customers, and the greatest volume of sales, are those who are constantly planning improvements in management, service, standards of quality, and methods of extending the scope of the store's trade.

Giving the people reasonable values for their money and doing so with a consciousness of serving them are what help build up a friendly psychology in the retail hardware establishment which vitalizes its entire personnel.

An occasional unexpected dessert or tidbit is a welcome addition to the regular run of meals.

Likewise, an occasional bargain or special price concession is a welcome surprise to the regular customers of the store.

It gives them a feeling of receiving unlooked-for favors.

It is not customary to view an ad-

vertisement such as the "Saturday Specials" of the Builders Hardware Company, reproduced herewith from the *Chronicle*, Warren, Ohio, from this angle of consideration.

Yet there is no doubt that it creates precisely the kind of favorable impression implied in the foregoing paragraph.

The dealer can afford to be gen-

# Saturday Specials!

AT THIS UP-TO-THE-MINUTE HARDWARE STORE

Aluminum Percolators
Special at

89c

BICYCLES Regular price \$35.00. Special

\$28.50

FISH POLES

18 ft. Bamboo Pole Special at

18c

Aluminum Kettles 8 quart special at

89c

FIELDERS GLOVE Regular Price \$4.00 Special at

\$2.48

BREAD BOXES arge size White Enamel. Regular price \$1.45 Special at

\$1.19

# The Builders Hardware Co.

WARREN'S LEADING HARDWARE A. M. LARSON, Mgr.

121-123 N. Park Ave.

Phone 1305

Advertisement of The Builders Hardware Company, Reproduced from the Chronicle, Warren, Ohio.

erous to his customers by advertising specials of this kind because it brings them more frequently to his place of business.

Moreover, in the state of mind of having been able to purchase articles much below their established price, they are likely to feel that they can afford to make other purchases at the same time.

Thus, commodities are sold at their customary price which might otherwise remain much longer on the shelves.

In the advertisement of the Builders Hardware Company, six articles are chosen for Saturday Specials.

They are so selected as to interest women, men, and boys of the company's clientele.

Aluminum percolators at eightynine cents and aluminum eightquart kettles at eighty-nine cents are manifestly bargains which the average housewife finds it difficult to resist.

Fielder's glove at \$2.48 is undoubtedly an unusual special which appeals to the boy who plays baseball.

The big reduction from the regular price of bicycles is also a persuasive influence in bringing boys and young men to the store.

The Builders Hardware Company's advertisement is made up in such a way as to catch the eye of the most casual observer.

Prices are set forth in big, heavy black figures, so that they stand out from the newspaper page with a distinctness certain to arrest attention.

Furthermore, the wording of the advertisement is brief but adequate, leaving the main emphasis upon the prices of the articles.

You can get more profit, more pleasure, and give more sincere service to your customers by following the plan of the Builders Hardware Company and publishing similar advertisements.

When people know that from time to time their patronage of your store is rewarded by favors of the kind set forth in these Saturday Specials, it will be easier to get them into the habit of coming to your

and expedience police.

store regularly for their hardware needs.

### Veteran Hardware Dealer Reaches End of Life's Journey.

The eyes never deceive.

Words and expressions may be as false as dicers' oaths.

But through the windows of the soul looks forth the real personality.

Everyone who knew him or who had business dealings with him were instantly impressed with the serene, truthful expression in the eyes of George A. Engelhardt, veteran hardware dealer of Chicago,



George A. Engelhardt.

who came to the end of life's journeyings July 18th, at Grant Hospital.

Because of the tranquil goodness which spoke in his eyes, his passing away is not a complete loss.

Life is made up of memories and he enriched those whom he left behind him by bequeathing to them the memory of pleasant deeds, helpful words, and eyes that spoke always sincerity and truth.

George A. Engelhardt was born in Lansing, Michigan, September 23, 1855, and came to Chicago when he was a mere lad.

At the age of 17 years he began employment in a hardware store conducted by Mr. Paulsen on North Wells Street.

Later he worked for Frank A. Stauber.

all and a mathematical

His ability and pleasing manners won for him a partnership in the Stauber's hardware business, and the firm became known as Frank A. Stauber & Company, occupying the building just east of 1060 Milwaukee Avenue.

In 1890 he purchased Mr. Stauber's interest and thereafter conducted the business under the name of George A. Engelhardt,

Three years later the building at 1060 Milwaukee Avenue was erected and at this location Mr. Engelhardt conducted a most successful retail hardware trade.

In 1921 his son, Gus, was admitted as a partner and the firm then became known as George A. Engelhardt and Son.

Although not in the best of health, Mr. Engelhardt took active part in the business until the early part of June, this year, when his condition demanded an operation which was performed June 27th, and from which he was apparently recovering.

However, he suffered a relapse when a second operation was performed on July 17th, resulting in his passing away early Tuesday morning, July 18th, at Grant Hospital.

The funeral was held from Humboldt Park Commandery Temple, 2410 North Kedzie Avenue, July 21st, at 2:00 p. m. under the direction of the Reverend Louis W. Goebel and D. C. Cregier Lodge, Number 643, A. F. and A. M.

He is survived by his wife, Hanna M. Engelhardt, and his son, Gustav G.

He was active in Masonic circles and held membership in the D. C. Cregier Lodge, No. 643, A. F. and A. M.; Oriental Consistory S. P. R. S.; Medina Temple, Mystic Shrine; and Ben Hur Chapter, No. 401, O. E. S.

Of course, you mark the things in the trade journal you want your head salesman to notice. Why not reverse the plan and have him mark up the items he thinks you should notice?

# Suggestions and Plans for Window Displays.

# Instructive Examples from Exhibits in AMERICAN ARTISAN AND HARDWARE RECORD Window Display Competition.

# WINDOW DISPLAY IS A MODEL OF ITS KIND.

Desires, emotions and ideas are conveyed or aroused by images.

Articulate speech carries thoughts to our minds or stimulates our emotions not by the sound of the spoken word, but by the images or pictures of things which they cause to be formed in the brain centers.

Expression is more complex and

strong an impression as the saw itself in the window of the dealer's store.

These are facts based upon the human processes.

It is in their application that more variations of results take place.

Being a form of expression intended to awaken desire and influence sales, window advertising is in the windows with reference to one another attracts notice and carries the selling message.

An excellent embodiment of these principles is to be found in the window display of saws and other carpenters' tools, designed and arranged by A. L. Clark for the Jordan Hardware Company, 670-678 Main Street, Willimantic, Connecticut.



Window Display of Saws and Other Carpenters' Tools, D esigned and Arranged by A. L. Clark for the Jordan Hardware Company, 670-678 Main Street, Williamntic, Connecticut.

flexible than the printed or uttered word.

Thus, for example, the majority of people get a clearer notion of the plot of a drama from moving pictures than they do from its presentation by the actors themselves on the stage.

No verbal description of a rose and its fragrance equals the actual realities.

And so, in window advertising, the dealer has the most effective form of bringing his wares to the attention of prospective customers.

The picture of a saw in a newspaper advertisement together with an account of its qualities and usefulness does not create as vivid and subject to the same possibilities of improvement in expression as the spoken or written word.

Just as it is possible to make language more eloquent and convincing by the right choice of phrases, so window advertising can be rendered more gainful by the use of lighting, color contrasts, background, and definite clarity of arrangement.

A jumble of commodities in a window is comparable with vague and confused speech from which it is difficult to derive clear ideas.

There is a logic in window displays just as there is a logic in human speech.

Orderly disposition of the goods

It has the high merit of clarity of expression.

At the very first glance, the eye perceives its main features.

There is no confusion, no haphazard jumbling of unrelated objects, and no crowding of goods in the window.

Prominence is given to a nationally advertised brand of saws.

Saws of various kinds are displayed in symmetrical arrangement pleasing to the eye.

Other carpenters' tools are displayed in the foreground in such a way as to be easy to observe without too great a rush of impressions interfering with one another.

The floor and interior of this win-

dow are finished in quartered oak. Two natural palms are used to tone up the effect.

The test of this window display is, of course, its restfulness.

This was amply achieved by the noteworthy increase in the volume of sales during the time that the display was in effect,

### Chandler & Farquhar Company Moves to Larger Quarters.

Chandler & Farquhar Company, the New England Tool and Supply Depot, has leased for a term of years large and desirable promises in Winthrop Square, Boston, Massachusetts.

Chandler & Farquhar Company has been at 32-38 Federal Street since 1894. A steadily increasing business has called for larger quarters so that from the initial store at the present location of one floor and basement the store has grown and now occupies five floors and basement equipped in the most up-to-date manner.

The new location in Winthrop Square to which the move will be made about January 1, 1923, includes an area about fifty per cent greater than the store now at 32-38 Federal Street.

The new Winthrop Square store is only a stone's throw from the present location, and although the main entrance will be at 250-260 Devonshire Street, a rear entrance from Federal Court leads off Federal Street, at No. 121, thus affording convenience in many ways.

In an interview with F. Alexander Chandler, President of the Chandler & Farquhar Company, our representative was informed that his company feels very much pleased in the location of the new premises, and in the particular workability of the space itself for the arrangement of a most modern and efficient store.

### Pioneer Hardware Merchant Passes Away.

A heritage of sturdy honesty, good fellowship, and gentle tolerance is the priceless treasure left by William Wallace, pioneer hardware merchant of Chicago, who departed this life July 21st at his residence, 1540 North Lawler Avenue.

His long business career of thirty-four years in the same location, 513 North Wells Street, Chicago, was replete with friendliness, wise judgment, sympathy, and qualities of manliness which won for him the esteem and affection of hundreds of people with whom he came in contact.

William Wallace was born in Leith, Scotland, in 1850, and came to America in 1871 where for a time he followed the trade of woodworker.

In 1878 he moved to Chicago, and ten years later opened the retail hardware store at 513 North Wells Street.

As his sons grew up he took them into partnership, and the business thrived under the firm name of William Wallace and Sons.

About two years ago he retired from active participation in the affairs of the store on account of failing health.

He was buried July 25th at Irving Park Boulevard Cemetery.

He is survived by his wife, Isabelle Wallace, and his five sons, Robert Y., John M., Edward H., Arthur C., and Alfred Lindsay.

He was a member of the city, state and national hardware associations; Ben Hur Lodge, Number 818; A. F. and A. M.; Masonic Veterans' Association; Humboldt Park Lodge, Number 658; I. O. O. F.; Victory Encampment; John G. Whittier Council, No. 612, National Union, and Clan Campbell.

# Finds AMERICAN ARTISAN Indispensable to Business.

To American Artisan and Hardware Record:

I find your journal indispensable in the conduct of our business.

Yours very truly,

H. C. WALCOTT,

Walcott-Stephens Company. -, Texas, July 17, 1922.

# Handbook Is Issued by Automotive Equipment Association.

A looseleaf handbook, bound in an unusually strong folder with leather covers, has been issued by the Standardization Committee of the Automotive Equipment Association.

It is divided into three sections, the first of which contains information pertaining to the Automotive Equipment Association as an organization.

The second section is devoted to commercial standard and recommended practice as adopted by the Association.

The third section deals with engineering standard and recommended practice furnished to the Association through the courtesy of the Society of Automotive Engineers.

It is the purpose of William M. Webster, Commissioner Automotive Equipment Association, City Hall Square Building, Chicago, Illinois, to add new information and data as they become available and to forward them to the members of the organization on looseleaf sheets.

# Advocates Open Price Policy for Trade Associations.

Greater stability of prices at normal levels is certain to result from the adoption of the open price policy by trade association, in the judgment of J. Nash McCullough, consulting industrial manager, National Association of Hosiery and Underwear Manufacturers.

Writing in the New York Commercial on the subject, he says:

The lawmakers of this country have always endeavored to make the manufacturers live in darkness.

They have permitted labor unions to combine and form organizations far more potent and powerful than our biggest trusts; they have permitted the formation of farmers' associations and cooperative organizations to control production of the soil, and to combine in the marketing of their products; but any time that the manufacturer has tried to find the light of day, our lawmakers in Washington immediately cry

"Wolf" and proceed to destroy that which will enlighten the greatest and most progressive brains in this country. Statistics show that the manufacturing industries of America are 78 per cent efficient, that the railroads are 64 per cent efficient and the farmers are 48 per cent efficient.

Try as they will, the lawmakers at Washington will not be able to stop honest open price method of exchange of sales information, because it is enlightening to the most efficient and productive body in America.

The recent decision of the United States Supreme Court has left the trade organizations and the progressive manufacturers America in a state of doubt as to whether they can continue to use the most enlightened vehicle that has ever been used in commercial life in this country, i. e., the open price plan of exchange of sales information.

There is no doubt that the decision of the United States Supreme Court spells disaster for all those associations who have paraded under the name of "open price," with fraudulent intentions.

However, any association that is operating on open price plan of information, based upon past sales or quotations, and that in no way discusses with its members at either meetings or by printed matter, the advisability or inadvisability of changes in price can not be classified with the American Hardwood Lumber Association.

To say that open price information, based upon past sales and quotations, is against the laws of the country, means, if carried to the broadest point of the law, that the stock and commodity exchanges of this country must stop publishing their sales prices at the end of each

Quite aside from the question of legality, the agreement is worthless, because it is no stronger than each man's belief in the good faith of each party to it; and since each man feels sure that some of his competitors will be quick to drop it

and reap a profit, he secretly ceases to follow it himself.

The agreement to tell one another what has been done is quite another matter, since after all it simply provides for a systematic exchange of information that is sure to come out.

This is so fair and works out so many good results that the trickiest competitor in the end sees it is to his advantage to live up to it.

There is not a manufacturer in the country today, if he is astute and alive to his opportunities, that can not procure within 48 hours any article his competitor has sold, and the price on this article.

The result in associations where open price policy has been followed have been greater stability to prices at normal levels, without arbitrarily attempting to control prices; the elimination of secret rebates and discounts, treating all customers fairly and on a footing of equality; and the uplifting of the entire industry to a higher level. (And uplift is something that most industries in America can use.)

At this late day and date the manufacturer is not going to be deprived of the first intelligent weapon that has been placed in his hands.

Therefore, I say, irrespective of Washington, open price is here to stay, in one form or another

### Coming Conventions

Western Implement, Vehicle and Hardware Association, Kansas City, Missouri, January 16, 17, 18 and 19, 1923. H. J. Hodge, Secretary, Abilene Kansas.

Texas Hardware and Implement Association, Dallas, Texas, January 23, 24 and 25, 1923. A. M. Cox, Secretary, 822 Dallas County Bank Building, Dallas, Texas.

West Virginia Hardware Association Convention and Exhibition, Huntington, West Virginia, January 30 and 31, and February 1, 1923. James B. Carson, February 1, 1923. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Indiana Retail Hardware Association Convention and Exhibition, Indianapolis, Indiana, January 30 and February 1 and 2, 1923. G. F. Sheely, Secretary, Argos, Indiana.

Michigan Retail Hardware Convention and Exhibition Grand Rapids. Feb.

tion and Exhibition, Grand Rapids, February 6, 7, 8, 9, 1923. Karl S. Judson, Exhibit Manager, 248 Morris Avenue, Grand Rapids. A. J. Scott, Secretary, Marine City, Michigan. Wisconsin Retail Hardware Associa-

tion, Milwaukee Auditorium, Milwaukee, Wisconsin, February 7, 8 and 9, 1923. P. J. Jacobs, Secretary-Treasurer, Stevens Point, Wisconsin.

Pennsylvania and Atlantic Seaboard

Pennsylvania and Atlantic Seaboard Hardware Association Convention and Exhibition, Philadelphia Commercial Museum, Philadelphia, Pennsylvania, February 12, 13, 14, 15 and 16, 1923. Sharon E. Jones, Secretary, 1314 Fulton Building, Pittsburgh, Pennsylvania. Ohio Hardware Association Convention and Exhibition, Cleveland, Ohio, February 13, 14, 15 and 16, 1923. Exhibition in the new Municipal Hall. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio. Illinois Retail Hardware Association

Illinois Retail Hardware Association Convention and Exhibition, Hotel Sherman, Chicago, Illinois, February 13, 14 and 15, 1923. L. D. Nish, Secretary-Treasurer, Elgin, Illinois.

Iowa Retail Hardware Association Convention and Exhibition, Des Moines, Iowa, February 13, 14, 15 and 16, 1923. A. R. Sale, Secretary, Mason City, Iowa.

New England Hardware Dealers' Association Convention and Exhibition, Mechanics' Building, Boston, Massa-chusetts, February 21, 22 and 23, 1923. George A. Fiel, Secretary, 10 High Street, Boston, Massachusetts.

New York State Retail Hardware Association Convention and Exposition, Rochester, New York, February 20, 21, 22 and 23, 1923. Headquarters, Powers Hotel. Sessions and Exposition at Exposition Park. John B. Foley, Secrerk. John B. Fold Bank Building, Foley, Secre-City tary, City New York.

### Retail Hardware Doings

### Georgia.

The King Hardware Company has opened a hardware store at 202 Marietta Street, Atlanta, under the management of D. B. Bartlett.

### Illinois.

Trumbull Lewis and a Mr. Larson have purchased the Bradshaw Hardware store at Somonauk.

#### Montana.

Kings Sporting Goods and Quality Store at Helena has moved from its old location into more modern and larger quarters in the new Eagles'

A new store, The Willard-Demmer Hardware, has been opened in West

Main Street, Massillon.
P. E. Snyder, hardware merchant of Blanchester, has purchased the building across the street from his present location, and will run a smaller hardware store than heretofore.

#### Texas.

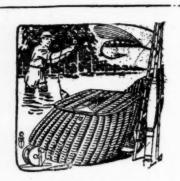
Randalls Hardware store at Walnut Springs has been destroyed by fire.

Don't try to show your whole stock in the window at one time. A mixed up, overfilled window makes a mixed impression on the observer's mind.

# Study and Interpretation of Advertisements.

You Can Make Your Advertisements More Gainful by Avoiding the Faults and Profiting by the Good Qualities of Others.

Get the men into your store for the purchase of fishing tackle and you have a chance to make friends with them.



### Tested Fish Tackle

Our Tackle is all guaranteed. We also carry

Seines complete, 20 ft. long by 4 ft. wide, with cords and weights, special at .....\$3.50

Gill Netting Seine Webbing, lb. . . \$1.10

Thermos Bottles, pints . . . . . \$1.75 quarts . . . . . \$2.75

Write for Catalog. Reach Base Ball Goods.

### Bowen Bros. Hardware Co.

829 BROAD ST. AUGUSTA, GA.

No doubt, they will come to you for other hardware articles later on.

Beyond question, one of the best ways to achieve this is through the kind of advertisement which is published by the Bowen Brothers Hardware Company in the *Augusta Herald*. Augusta, Georgia, reproduced herewith.

The headline, "Tested fishing tackle," wins the confidence of the prospective buyer.

Naturally, every fisherman wants

tested tackle, and very few dealers ever think of using that argument in their publicity.

The advertisement under consideration is sufficiently well illustrated and has the supreme merit of straightforward quotation of prices.

It is easy to read, thanks to the generous use of white space within the borders.

This is the time of the year when there is considerable demand for mason fruit jars.

Thrifty housewives buy fruit for preserving when it is plentiful and, therefore, comparatively cheap.

They will purchase their supplies at the hardware store if the dealer gains their attention through effective publicity.

An excellent example of the right kind of advertising along this line is to be found in the copy of the Mt. Vernon Hardware Company, reprinted herewith from the Mt. Vernon News, Mt. Vernon, Illinois.



This advertisement is devoted exclusively to mason fruit jars. Although brief as to text, it is adequate and convincing. The prospective customer is told that the prices quoted include lids and rubbers.

An ample allowance of white space gives a strong contrast in the

makeup of this advertisement, which individualizes it on the newspaper page and thus gains for it the notice of the prospective customer.

In most parts of the country the building revival is in full swing.

Therefore, there is a timeliness in the advertisement of the Alliance



Hardware Company, reprinted herewith from the *Leader*, Alliance, Ohio.

In addition to making the appeal to building contractors, the advertisement addresses itself to the man building or repairing his own home.

By logical connection of ideas the advertisement includes furnace repairs and roofing repairs.

It concludes with a mention of a standard make of warm air heaters.

The border of the advertisement is made up of pictures of various articles of builders' hardware and is distinctive enough to give individuality to the type and arrangement of the copy.

Misfortune is the filter that separates the true friends from the counterfeit.

### Warm Air Heater Dealer Uses the Kind of Advertising Which Tells the People the Most Important Things.

Instead of Merely Running a Business Card in Display Type, He Gets Full Value from Newspaper Space by Persuasive Statements of Facts.

DVERTISING pays. The sun gives warmth. Water is necessary to life and growth. Darkness is the absence of light. Two and two make four.

In that mixed crowd you are likely to find people of varying for-

There may be among them a warm air heater dealer whose colset your deduction temporarily, by declaring that he is a regular advertiser and that, in spite of advertising regularly, he finds business dull and expenses hard to meet.

But if you investigate further, you will discover that although he advertises, he does not advertise.

That is to say, his advertisements are merely vague statements, containing no news, no definite presentation of qualities and service of the warm air heater which he handles, and nothing that would induce strangers to come to him for the purchase of a warm air heater.

His advertisements, as a rule, consist of a reproduction of his business card in display type.

In other words, they are not advertisements; and not being advertisements they do not partake of the virtue of advertisements.

In other words, they do not pay. It would be an easy thing to fill many pages with sentences showing the wastefulness of this kind of publicity and cataloguing and describing the dealers who somehow or other contrived to continue in the same old dusty shops with flyspecked windows year after year.

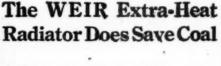
But that would not be of as much benefit to our readers as the more constructive thing of showing how to do it instead of how not to do it.

Stories of failure do not stimulate business.

They are depressing.

The way to get out of the dull routine and to speed up profits is to advertise intelligently, persuasively, and persistently.

A forceful example of the right kind of advertising-of the advertising which brings in the moneyis shown in the accompanying advertisement of Charles W. Woizeski, reproduced herewith from the Bloomington Pantagraph, Bloomington, Illinois.



N the ordinary warm air furnace a very large per cent of the heat generated from burning fuel goes up the chimney simply because no arrangement has been made on the furnace to absorb the heat.

how the products of combustion leave the main furnace and travel thru the WEIR extra-heat drum which absorbs these heat units which ordinarily pass out the chimney and are wasted. The radiating surfuce of this auxilary drum is as large as some furnaces. Thus it will be seen that in fuel saved.

The illustration shows the WEIR is in reality two furnaces in one and that this artangement alone will save coal.

> Many users of WEIR furnaces report that the WEIR consumes 25% to 35% less coal than other furnaces they have used, so it will take a very few years for a WETR to pay for itself in

All the heat saved by the WEIR extra-heat radiator is your reward for having a WEIR in your home.

If you are going to install a Furnace in your new home, or if your old heating system is inadequate, let us put in a Weir Furnace now before the rush of Winter orders: Estimates free.

Furnace Repairing, Tin Roofing, Spouting and Sheet Metal Work. Estimates Furnished Free. 111 WEST FRONT STREET

The WEIR is made by the Meyer Furnace Co., Peoria, III.

Effective Advertisement by Warm Air Heater Dealer, Reproduced from the Bloomington Pantagraph, Bloomington, Illinois.

These are truths about which there is no room for controversy.

Go to any mixed crowd of people and state these facts in your most belligerent tone of voice, and you will not encounter a single denial of any of them.

lar is frayed and whose coat is unduly shiny at the elbows.

You do not need to be a Sherlock Holmes to deduce from these appearances that he is one of the dealers who does not advertise.

If you question him, he may up-

To begin with, this advertisement has the advantage of the cumulative publicity of the manufacturer by featuring a warm air heater of standard construction and national reputation.

Instead of a multiplicity of technical details, the advertisement concentrates upon the feature of the "Weir" warm air heater which is undoubtedly of most interest to the householder.

It tells in simple language and illustration about the "Weir" extra heat drum, which absorbs heat units that ordinarily pass out the chimney and are wasted.

Naturally, with soaring coal prices, the householder does not want to burn ten tons of coal when seven or eight tons will carry him through the winter with full comfort.

This line of reasoning is followed to the conclusion that the extra heat drum of the "Weir" warm air heater gives so much additional radiating surface that it has the effect of two furnaces in one.

In this advertisement of Charles W. Woizeski, it will be noted that there is no exaggeration.

It is not said that the "Weir" warm air heater is the best in the world nor that it gives the most heat with the least amount of coal.

In spite of the national campaign of the Associated Advertising Clubs of the World in behalf of "Truth in Advertising," a big percentage of advertisements contain unreasonable and harmful exaggerations.

This operates against the general credibility of advertising.

Indeed, most people have acquired the habit of making allowances of 33½ per cent or more for superlatives and other statements in most of the advertisements which they read.

In view of these facts, therefore, Charles W. Woizeski's advertisement of the "Weir" warm air heater deserves to be held up as a model to the trade.

Truth is mighty and will prevail. Truth pays dividends.

When you advertise a warm air

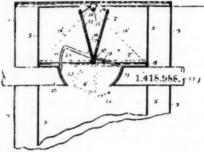
heater, tell the truth about it—all the facts.

If it is a good warm air heater, you can tell all the facts about it in simple, plain and everyday language, and in such a way as to gain the confidence of the people and get their orders.

You are in business for orders and profits and you will get the most orders and the most profits by truthful, intelligent, instructive advertising, joined with friendly service.

### Deflecting Damper for Pipeless Furnaces Is Patented.

Under number 1,418,988, United States patent rights have been granted to James A. Tarte, Blaine,



Washington, for the deflecting damper for pipeless furnaces described herewith:

In a pipeless, hot-air furnace in combination, a hot-air outlet flue, a bifold, deflector damper hingeably mounted in said flue near its outer end and adapted to divide the passing stream of hot air and deflect the same, and further adapted to close said hot-air, outlet flue, two by-pass. hot-air, outlet pipes leaving said hot-air flue below said deflector damper, a damper fastened to each of the leaves of said bifold damper and adapted to close said by-pass, outlet pipes when the leaves of said bifold damper are fully opened and further adapted to open said bypass pipes when said bifold damper is closed, and means to operate the leaves of said bifold damper.

# Advance in Price of Furnace Fittings Is General.

Advices from the W. E. Lamneck Company, Columbus, Ohio, state that the recent advance in the prices of warm air registers and furnace fittings is general throughout the industry.

Business is improving. The W. E. Lamneck Company reports that by May 16th this year the Company had as many full carload orders as in the whole of the year 1921.

### Announces Forthcoming Marriage of Daughter to Professor Day.

Invitations are being sent out by Mr. and Mrs. John W. Gunning, Champaign, Illinois, for the marriage of their daughter Marie Margaret to Professor V. S. Day of University of Illinois, which is to take place August 5th in St. Mary's Church, Champaign.

Professor Day has a fine reputation in the heating and ventilating trade on account of his research work at the University of Illinois.

# Distributing House in Milwaukee Is Opened by Meyer Interests.

For the greater convenience of its many customers in that territory, The Meyer Furnace Company has organized and incorporated a distributing house in Milwaukee, Wisconsin, under the name of The Meyer Furnace and Supply Company.

The new establishment will send out salesmen from Milwaukee and will ship goods from that point, including "Weir" and "Warm Home" furnaces. Handy Pipe and Fittings, a full line of registers, asbestos paper, and accessories usually handled by a first-class warm air heater supply house.

The Milwaukee branch house is under the management of F. W. Giese, a thoroughly competent warm air heater expert.

Mr. Giese and his staff of salesmen and the office personnel are working together for the prompt filling and shipment of orders and for the giving of friendly service in all matters relating to the trade.

The new distributing house is located at 172-174 Reed Street, Milwaukee, where a complete stock of goods is to be carried at all times.

# Practical Helps and Patterns for the Tinsmith.

Aids to the Improvement of Craftsmanship and Business. News from Various Branches of the Sheet Metal Trade.

### PATTERNS FOR LIP ON COFFEE POT.

By O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri. Written especially for American Artisan and Hardware Record.

In construction gangs as for railroads, irrigating dams, and other places, where large cooking utensils are required, the sheet metal worker meets with much special work, not only for drip pans, boilers, but also coffee pots.

Our sketch shows how to develop the lip geometrically and while very few men would go to the trouble of laying out the lip for one vessel, still the treatment is interesting and is similar to all other conical problems that have oblique intersections.

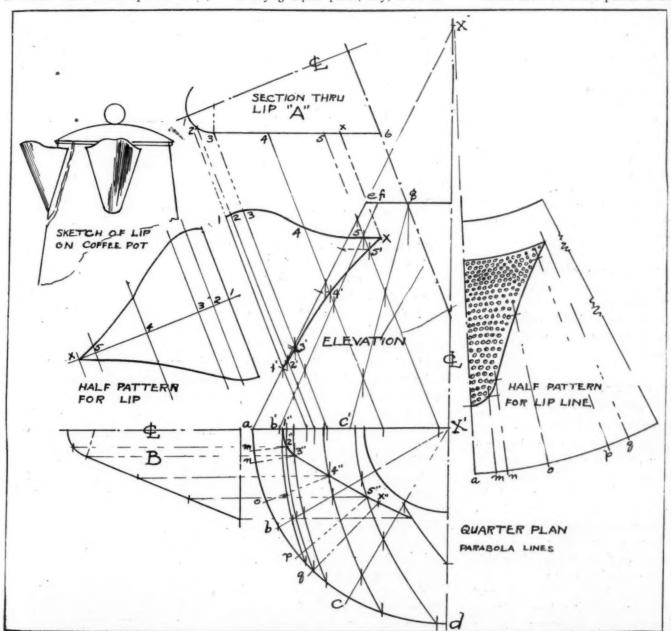
We first draw the half elevation working from the center line and draw the half plan, which is divided in say 3 equal parts, say, a-b-c-d.

From these points we erect lines and draw the elevation lines as b'-f; c'-g.

Observe these lines correspond with those in the plan. Now by roughly sketching in the elevation lip, placing the angle as I-I', which enables us to draw the section through lip "A."

Divide the arc 1-3 in say 2 spaces and then divide the distance 3-5 in equal spaces.

From each of these points draw



Patterns for Lip on Coffee Pot.

lines parallel with I-I' of lip to intersect the elevation lines and center line and the base.

Now where these lines cross, the elevation line a-e, we drop lines to intersect as at a-X'.

In the same way where each of the lines from "A" cross this elevation line b'-f', we drop lines to plan b-X'.

Next from each point made in elevation line c'-g, we drop lines to the plan line c-X'.

Then through these intersections we trace the parabola lines shown.

After this we transfer section "A" with all its points to the position B.

From each of these points we square over lines parallel to a-X' until they intersect parabola lines of similar number.

This enables us to draw the out line in plan of the points of penetration between the lip and the taper, as in points 1"-2"-3"-4"-5" and X".

By erecting lines from these points into elevation, we establish the points 1'-2'-3'-4'-5' as shown.

Sketch this line and where it meets with the top line 1-5, as in point x, the finish of miter is established.

After this, the pattern for lip can be laid out as shown by picking the girth from "A."

By similar conical treatment, the pattern for the body showing the outlines on which the lip must fit is shown.

### Helps Dealers Sell More Copper for Roofing and Other Uses.

Sheet metal contractors have recently received a concise broadside of the advertising which is being addressed to the consuming public by the Copper and Brass Research Association, the purpose being to call attention to the selling force being exerted in their behalf. The title of the broadside, with cover printed in colors, is "Some Metal, I'll Say."

On the inside is a brief message addressed to contractors explaining the scope of the advertising campaign, and on the opposite page are reproduced some interesting facts about copper, including a table of weights of different kinds of roofing to the square laid.

Opening, then, into a sheet 14 by 21 inches, the folder reproduces some of the consumer advertisements pertaining to the sheet metal industry.

To give the sheet metal contractor a ready means of taking advantage of this advertising, there is attached to each broadside a leaflet of the size which fits readily into a small correspondence size envelope or may be conveniently placed on counters.

The title of the circular, the text of which is reproduced below, is "Metal Mileage," and the page which confronts the reader on opening it invites him before letting out his next sheet metal job to get the sheet metal contractor's price on copper.

The dealer's name is imprinted free. A liberal supply of the circulars is furnished.

The circular contains a reproduction of a photograph of a copper leader-head installed in 1785, the date and the initial of the homeowner being stamped in the metal.

This is contrasted with a photograph of a galvanized leader-head erected in 1918 and removed as early as this spring, in a sad state of dilapidation as a result of rust.

A group of photographs of copper downspouts on Colonial buildings in Germantown, Pennsylvania, is also reproduced, each of the five downspouts shown being more than 100 years old.

The text of "Metal Mileage" follows:

"Mileage is what you want from the tires on your car. The cord tire is popular becuse it gives you more mileage and costs you less per mile.

"Metal mileage is what you expect from your leaders and gutters, roof, flashings, cornices, valleys and other sheet metal work.

"Use copper—the cord tire of metals—and get the kind of metal mileage that saves you money.

"The real cost of a tire is only found by dividing the number of miles of service into the dollars of original cost.

"It's the same with your sheet metal work. When you divide the years of service into the original cost, you find that

"Copper Costs You Only About One-sixth as Much as the Most Used Substitute Metal.

"An average house has 150 feet of leaders and 100 feet of gutters. Calculating the life of the house as 30 years (although copper will, as a matter of fact, outlast the house itself), you will find that—

"Copper installed at today's prices will cost you about \$3.35 a year; the most used substitute will cost you about \$18 a year.

"Copper gives a generation of dependable, expense-proof service for each year of repair-ridden trouble experienced with quick-rusting substitutes. Copper is cheaper because you pay for it only once."

### Wants Catalogs and Price Lists for New Tin Shop.

Having opened a sheet metal shop at 345 Beach Street, Aurora, Illinois, C. E. DeWald wants to receive catalogs and price lists of sup-

ies from jobbers and manufacturers.

He has had long and varied experience in every branch of sheet metal work and possesses the necessary business ability and training to make a success of the new shop.

### Capital Held in Open Accounts Is Useless to You.

Trying to do business with an insufficient amount of capital and giving too long credit constitute some of the chief causes of so many failures in the world of commerce.

The utmost cleverness, honesty, and diligence will not avail against a lack of funds.

Capital tied up in open accounts is useless to you.

Get it out by prompt collection and use it to enlarge your business.

Good-will has a real value—it's tomorrow's insurance.

# Michigan Sheet Metal Folks Travel by Water and Rail to Stage Big Two-day Outing at Chicago and Milwaukee.

Secretary F. E. Ederle as Master of Revels Keeps Everybody Happy and Runs the Joy Machinery at Full Speed All Through the Trip.

MICHIGAN, MY MICHIGAN. Words by H. E. Doherty.

1.

We meet again, Sheet Metal Men, From Michigan, fair Michigan—
Some are tall, some short and fat, Some are bold, but don't mind that. We all are wise, 'tis justly said, For now all figure Overhead—
Sheet Metal Men, not Cheat Metal Men, In the State of Michigan.

2

We meet again the Traveling Men From Michigan, dry Michigan; Into their grips let's take a peek And see why they seem so very meek; We get together twice a year, So let us all give one good cheer, Sheet Metal Men and Traveling Men, The best there are in Michigan.

CCORDING to the printed A program, the Annual Outing of the Michigan Sheet Metal and Roofing Contractors and the Travelers' Auxiliary officially started Tuesday evening, July 25th, but members and their families started to drift into the Hotel Pantlind Monday evening. Of course, the Grand Rapids "bunch," including Harry Rhodes, Doc Weatherly, Wayne Ewart Stadt, Young, Charlie Nason, Clarence Wormnest and T. I. Peacock, and headed by the hospitable Ederles, were on the job, every minute of the time, and the Ederle home all Monday and Tuesday looked like a small sized "family hotel."

By 5:00 o'clock Tuesday, practically all had arrived bag and baggage, and when the four cars loaded with happy picnickers pulled out of Grand Rapids, all cares were forgotten and had anyone been discovered on the train without a grin, it is safe to say he or she would have been dropped by the wayside.

As an arranger of details, we must all take off our hats to Frank E. Ederle. Everything went like clockwork. We were even given our stateroom keys on the train, so that when we reached the boat there was no tiresome standing in line.

H. J. Briggs, one of the newest Auxiliary "recruits," missed his vocation. Instead of trying to sell National Paint and Varnish products, he'd shine as a street car conductor, for he sure was a successful "ticket butcher." No wonder his mother and father, Mr. and Mrs. R. E. Briggs, looked so proud of their boy.

W. P. Laffin and Etta Cohn of the Auxiliary, came all the way from Chicago to join the party at Grand Rapids, and at Holland (Michigan, not Europe), where we boarded the boat, Charlie Glessner, T. E. Warner and Mrs. Warner, Auxiliary members from Chicago, met us, a self-appointed reception committee.

Entertainment on the boat was furnished by "Warner and Laffin" of Chicago, and "Doherty and Pierson" of Detroit-two star vaudeville teams, neither rivals nor competitors, but each in a class by them-What is wrong with the selves. booking agents on the Big Time Circuit? They must be asleep if they have left that "heavenly pair of twins" run loose this long. They are sure great-just like crackerjack, the more you see and hear of them the more you want, but, in a way, the Chicago troupe took unfair advantage of the Detroit, as they brought Mrs. Warner along to add real class to their act.

"CAP TIN" Doherty and tenth assistant sailor apprentice and wireless operator Pierson wrote all their own songs, and, as they were afraid they'd need assistance, published them in book form and distributed copies among the crowd—and such harmony!—but who cared about harmony—those of us who couldn't sing "hollered," but all we wanted was to make noise, and we sure did that.

The Warner-Laffin outfit, especially the Warner part of it, really can sing, and they, too, wrote their own songs, but when it comes to real, side-splitting humor, Bill Laffin is there with the goods.

It was a wonderful night—the weather man did his best—no moon, but plenty of moonshine and stars, and the water smooth as glass.

J. Harvey Manny, R. W. Blanchard, George Carr and J. F. Johnson, members of the Chicago "bunch," must have stayed up all night so as to get to the boat in time Wednesday to at least find some of us still on board.

Wednesday morning we all had breakfast at the Hotel Sherman, Thompson's, or Pittsburg Joe's, or wherever we wanted to go.

Part of the crowd visited the department stores; some of the ladies went through Marshall Field and Company's store, and the men roamed around town and inspected the "ice cream" parlors.

At 11:00 o'clock, H. S. Minor of the Publicity Department of Armour and Company, personally appeared at the Hotel Sherman with yellow Armour badges, tagged all the party and rounded us up for our trip to the Stock Yards.

William Petersen of the North Shore Line, stayed with the party practically all the time, and as an organizer and leader of parties he is second not even to Frank Ederle.

Special elevated trains took the party out to Armour's and this was a new experience for a great many of our Michigan friends, for a number of them had never ridden on elevated trains. Newt Pierson, one of these novices, was afraid the train was going to fall off the elevated structure, and as Secretary Rasch of the Detroit "bunch" sat near, he prayed if the cars did fall

that Rasch would be on the bottom layer, not on the top.

At the Yards, guides met us and for an hour we walked up and down stairs, roasted one minute and froze the next, but we can all say that it was one of the most interesting and instructive trips we had ever made. None of us ever realized that there was so much "red tape" connected with preparing meats for the market.

We were all tired and very hungry when we sat down to luncheon in Armour's cool, inviting resAfter luncheon we piled into what we Chicagoans call "rubber neck wagons," and took a fifty mile trip on Chicago's boulevard system, riding through all of the city's public parks, reaching the Hotel Sherman by 5:30, in time to wash up for the banquet at the College Inn.

At 8:00 o'clock we boarded Special North Shore Line trains for Milwaukee.

We had a noisy but happy trip and at 10:30 reached the Wisconsin Hotel, Milwaukee.

It's hard saying what time the

Louis Kuehn, president and treasurer, was on hand to extend a welcome and an entertainment committee, composed of 14 department managers, was busy all day making the guests feel at home.

At 9:00 o'clock on the dot, the Milcor busses lined up in front of the Wisconsin Hotel and three busloads of men piled in for a trip to the outskirts of the city to visit the Milwaukee Corrugating Company's sheet mill and factory.

The first stop was the sheet mill, where the visitors were guided



1-Ma and Pa Ederle. 2-At Armours Plant, Chicago Stock Yards. 3-The moon on Lake Michigan before the "moon-shine" eclipsed it. 4-The George Carrs and a friend at Garfield Park Conservatory, Chicago. 5-The Chicago "rubberneck" ride through the parks.

taurant, where a splendid meal was served under the personal supervision of Mr. Minor and Miss Noyes, who has charge of Armour's Restaurant. During the luncheon Lester Armour came in and in a few short words bade us "welcome." The hosts at the luncheon, the Chicago manufacturers and jobbers, distributed pound boxes of Marshall Field's candy to the ladies and especially prepared boxes to the youngsters. Mr. Minor also saw to it that the ladies were given generous boxes of Luxor Powder and sachet made by Armour and Company.

"bunch" retired, for the night, but when the telephone operator called all the rooms at 7:00 in the morning it is a safe bet that most of the party thought it was only 2:00 o'clock in the morning.

At Milwaukee, the entire party were guests of the Milwaukee Corrugating Company for the day.

Milwaukee Corrugating Company Is Host to Outing Party on Thursday's Visit to Milwaukee.

Charlie Nason, the giggling Milcor boy of Michigan, had a proud day showing his many Michigan friends that his house can always deliver the goods. through by representatives of the company headed by J. H. Christian, manager of sales, and C. L. Atwood, manager of Advertising Department.

The Milwaukee Rolling Mill plant covers several acres of land and is a complete rolling mill from all standpoints. Visitors were shown every process in the making of "Milcor" sheets, from the bar to the finished sheet. This was the first time that many metal workers had seen the making of sheets. A hot place this was as red hot steel sheets were going through rollers and lying about the floor cooling off.

Annealing, pickling, and galvanizing processes proved of great interest and the speed with which the finished sheets were stamped and stacked ready for shipment was great evidence of a large output.

After visiting the shipping platform, which ended the trip through the mill, the men boarded the busses again, and were off for the Milwaukee Corrugating Company's factory.

Here the visitors were shown through the executive offices and then began a journey through one of the most interesting places sheet metal men can think of.

Here they saw the making, pack-

luncheon date with the ladies, who had spent the morning also as guests of the Milwaukee Corrugating Company, touring the boulevard system of Milwaukee and visiting the animals in Washington Park. A charming "bunch" of "Milcor" ladies accompanied the party and saw that no one strayed.

### Detroit Loses Big Ball Game to Michigan All Stars.

After a hearty "Milcor" luncheon the crowd strolled over to see the annual championship ball game.

The sun which had kept itself behind clouds all day, came out now to make the weather ideal for a hot game. All Stars.

Klopf, the great shoeless center fielder, hung up another tally and then Sweitzer brought the crowd to its feet by tying Armstrong for home run honors.

The Michigan All Stars now took the field, a run to the good, but at the end of Detroit's half of the second, they were four runs behind.

Armstrong, Armco Pierson, Hess, Wrobel, and Roberts brought in the five runs. Armstrong held the Michigan All Stars runless in their half of the second. Then Shouldice did the same thing for Detroit in their half of the third.



The entire outing party after the Milcor Luncheon at Washington Park Pavilion at Milwaukee, Wisconsin.

ing, shipping and storing of all the various "Milcor" products, such as eaves troughs, wire eaves trough hangers, metal garages, ventilators, metal lath, metal shingles, elbows and various other items all familiar to the trade.

The Milwaukee Corrugating Company's factory is an immense plant, highly systemized and a model for efficiency as well as safety for their employees. Of special interest to the visitors were the safety straps attached to the arms of the operators on stamping machines.

Then the boys were all lined up in front of the office building, where a picture was taken, after which they boarded the "rubbernecks" again, and were off to Washington Park, where they had a

Captain Sweitzer of the Michigan All Stars won the toss of the coin and his team took the field.

Just before he called the game Umpire Frank Vyvyan of Milwaukee Corrugating Company announced that a silver loving cup would be presented by his firm to the player making the most home runs.

Armstrong, pitcher for Detroit, was the first man up in the game, and he went after that loving cup on a jump, knocking out a beaut of a home run.

A bad start for Shouldice, pitcher for Michigan All Stars, but he tightened up and stopped further scoring after Hess crossed the pan with Detroit's second run. Shouldice redeemed himself with the bat, and he scored the first run for the The Michigan All Stars all got going now and Armstrong was nicked for three runs, Klopf, Muelenberg each registering and Sweitzer clinching the "Milcor" loving cup by clouting out another homer. Andree replaced Sweitzer at first as the All Stars took the field—running out the last homer, and the heat made it necessary for Sweitzer to take a rest.

Detroit got one more in the fourth. Michigan All Stars pulled three across in their half, making the score read 9 to 8 in their favor as the fifth and last inning opened up.

Detroit got desperate, and when the smoke cleared away, they had two runs across the plate, and now they were leading by one run.

All they had to do now was hold

them down and they were doing well, Armstrong pitching steady ball until Lewless caught a slow one with the end of his bat. W. Dalny knocked out a stinger, scoring Lewless. This tied the score, ten up. With two men out and two strikes on the batter, Catcher Armco Pierson got excited and tried to catch W. Dalny off third base. His healthy heave went out to the field and Dalny romped home with the winning run for the Michigan All Stars.

After the excitement, Bill Sweitzer was presented with the loving cup donated by the Milwaukee Corrugating Company for making the most home runs of the game. It is a beautiful cup, made from a Milcor sheet and Louis Kuehn says that after it goes through a nickeling bath, it will be a real pretty cup.

It was a good game, lots of fun, lots of errors, lots of hitting, fanning, and slow running.

Here's the line-up and a simplified score chart showing only the runs:

### Michigan All Stars.

Shouldice, p	1	0	0	1	0
Ruehl, 3rd		0	0	0	0
Klopf, c.f	1	0	1	0	0
Muchlenburg, 2nd		0	1	~	0
Sweitzer & Andree, 1st	1	0	1	·	0
Lewless, c	0	0	0	0	1
H. Dalny, r.f	0	0	0	1	0
W. Dalny, 1.f	0	0	0	0	1
C. F. Nason, s.s		0	0	1	0
	_	_	_	_	-
	3	0	3	3	2
Total runs					11

Detroit.					
Armstrong, p	1	1	0	0	0
"Armco" Pierson, c	0	1	0	0	0
Hess, 1st	1	1	0	0	0
Zink, 2nd	0	0	0	1	0
Clunkie, 3rd	0	0	0	0	0
Huck, s.s	0	0	0	0	0
Wrobel, r.f	0	1	0	0	1
Schild, c.f	0	0	0	0	1
Roberts, l.f		1	0	0	0
	2	5	0	1	2
Total runs					10

Umpire—Frank Vyvyan of Milwaukee Corrugating Company, Milwaukee, Wisconsin. Score keeper—Ralph W. Blanchard, Manager Hart. and Cooley Company's Chicago office.

### Baseball Sidelights.

Nobody knew that Shouldice could pitch but he was right there and he could use the stick, too.

Muelenberg with a complete uniform, a Hack Miller figure, and pretty daughter rooting, "Come on there, daddy, hit it out," did the best he could, but he thinks he canplay push ball much better than baseball.

Sweitzer had a complete uniform, too—his two homers give him a license to wear it.

Charlie Nason played a fine game at short. He made no errors—he couldn't get that close to the ball. Charlie is a good golf player.

Armco Pierson wore his golf knickers and stockings, a very pretty outfit.

Lusk walked away with Frank Ederle's coat, but they swapped back again after they found each other at the hotel, and all was well.

The game was over at 3:30, and immediately after the winning run and presentation of the cup we all piled back into the "rubber neck" wagons and started for the hotel, as Mr. Petersen of the North Shore was again on the job, ready to ship us back to Chicago on the special train which left at 4:30.

Instead of one big party Thursday evening in Chicago, it was thought best to give the "bunch" time to do as they pleased. At 10:00 o'clock such a tired, but, oh, such a happy crowd boarded the boat for the homeward trip.

Once again Michigan has had one of its wonderful outings and once again we can all say we had a wonderful time.

Ask "Doc" Weatherly if it wasn't one great big success, but next time we are willing to wager Mrs. Weatherly is going along with 'Doc," as every time you looked at him he was having his picture taken with another lady.

All day Friday and in fact until late at night, the "good-byes" were said at Grand Rapids.

As a perfect ending to a perfect outing, let's all once again sing that toast dedicated to the greatest leader of them all—Frank Ederle (tune, "Sweet Adeline"):

Frank Ederle, our Ederle,
This night, dear pal,
We all greet thee.
In our dreams,
Your fat face beams—
You're the power of this crowd,
Frank Ederle.

### Receiving or Delivering Railroad May Be Sued on Freight Claims.

The United States Supreme Court has recently settled a question which has long vexed business men and their counsels, which was never definitely and finally settled before.

The question is this:-

When a consignee receives goods which have passed over two or more railroad lines, and the last line delivers them in bad condition, so that the consignee has to sue for damages, which road shall he sue, and how shall he prove which line caused the damage?

Heretofore, the attorney for the plaintiff did not know which road to sue, and the cost of suit, sometimes, would be far more than the damage would amount to, and the shipper or consignee, because of the hopelessness of getting evidence, has many times laid down and taken his loss.

The Supreme Court has now said that you can sue the last road. that is, the one that delivered the goods to you in bad condition, and that you do not have to prove that damage occurred on its lines. If the damage did not occur on the last road, you can be sure it will go back on the road that it did occur on. Also, according to the Carmack amendment, passed by Congress in 1906, if it is more convenient, you can sue the first road, that is, the road which accepts the goods for shipment. Therefore, it is the law that you can sue the road which accepts for shipment, or you can sue the road that delivers in bad condition. If the shipment passed over more than two roads, you cannot sue an intermediate road, unless you have proof that it caused the damage. The Supreme Court holds there is no inconsistency between these two provisions.

The reason for this is that the intermediate road is neither the road of origin nor of delivery of shipment.

Under this decision, shippers and consignees of freight are in better position to get their rights from railroads than they have ever been before. When goods are lost or damaged en route, the party who has to bring the suit need not think at all about where the damage occurred. If it is more convenient for him to sue the line that accepted the goods for shipment, as it

would be, if the shipper were to bring the suit, he can sue that line, and, at the trial, all he need do is to prove that the goods were in good condition when accepted, and in bad condition when delivered.

If it is the consignee who was to bring the suit it is more convenient for him to sue the last line—that is, the line that delivered, and he can do this without regard to where the damage occurred. At the trial he will have to produce the same evidence that the shipper would have to produce, viz: I—acceptance by the first road in good condition, and 2—delivery by the last road in poor condition.

# Sheet Metal Contractors' Association of Pennsylvania Discusses Trade Problems in Annual Convention.

Excellent Addresses Are Delivered on Metal Roofing, Making Ingot Iron, Trade Development, Overhead and Cooperation.

EARNESTNESS of purpose, due largely to the persistent energy and inspiration of its secretary, W. F. Angermyer, characterized the annual convention of the Sheet Metal Contractors' Association of Pennsylvania, held July 27 and 28, 1922, in Hotel Lawrence, Erie, Pennsylvania.

Thursday, July 27, 1922.

The first session of the Convention was called to order Thursday morning, July 27th, by President Louis Luckhardt.

After the singing of "America" by the assembled delegates, an address of welcome was delivered by City Solicitor M. Murphy, representing Mayor Miles B. Kitts.

President Luckhardt made a fitting response and then appointed the convention committees.

The remainder of the morning meeting was devoted to the discussion of problems presented through the Question Box.

The afternoon session began at 1:30 o'clock with moving pictures of the manufacture of Armco Ingot Iron accompanied by an explanatory lecture by H. M. Richards of American Rolling Mill Company.

Mr. Richards was followed by George J. Clautice of Lyon, Conklin & Company, who gave a moving picture talk on a series of tests with real barn-burning, lightning on buildings covered with metal and other kinds of roofing.

Extracts from Talk by George J. Clautice.

Our company's engineer, J. Stuart Walter, for the past three years has been experimenting with electrical apparatus in an effort to generate what would approximate a bolt of lightning that could be used in subjecting roofing material to a test for lightning.

Finally he succeeded, and as a result

Finally he succeeded, and as a result the company now has an electrical outfit which will generate a flash of lightning with a current of approximately 1,100,000 volts. It will produce a 20-inch gap flame, approximately % to % inch thick.

000 volts. It will produce a 20-inch gap flame, approximately % to ½ inch thicis.

This is of sufficiently high voltage, as the tests show to set fire to the test barns which are not covered with metal roofs. In fact, it has been conceded by all who have witnessed the tests that it is of sufficient power to demonstrate the vulnerability or the impregnability of different kinds of roofing materials.

The lightning is discharged from a wire leading from this machine and terminating 8 to 10 inches above the barns to be tested. Those who have some knowledge of electricity know that electricity will jump from the end of one conductor to another or, to speak in the parlance of the electrician, it will arc. A part of the scheme to produce this lightning was to have the return wire placed some distance away from the first wire so that when the current is turned on there will be a continuous flame as the current arcs from one wire to the other. This is the way the lightning is produced for these tests.

In order to test several kinds of roofing materials the company built miniature barns, 12 by 18 inches in size and 12 inches high at the peak. They were sheathed with ½-inch boards and provided with removable bottoms so they could readily be packed with hay to approximate the average farm barn.

These barns were roofed with different materials as follows: One had a 5-ply high grade slag roof; one was covered with asbestos shingles of an approved type, one with slate of single thickness, one with galvanized steel and one with terne plate. These barns were all fitted with a copper leader pipe leading to a few inches below the base.

These barns when subjected to the test were placed on a platform with the wire discharging the electricity or lightning from 8 to 10 inches directly over the roof, and the return wire referred to in the foregoing some 7 or 8 inches below the base of the barn, thus bringing the barn directly in the path of the lightning.

when the electricity was turned into the machine there was created a blaze about the thickness of an ordinary telephone cord shooting downward to the roof, with the following results:

(1) A 5-ply pitch and (slag) roof was visibly penetrated by the lightning and in two seconds the hay in the miniature barn burst into flames.

(2) A fireproof asbestos shingle roof was used with the same result, the lightning piercing the roof directly where it came in contact with it, and setting fire to the contents in a second and a half.

(3) A slate roof was used with the same results in less than two seconds.

(4) A galvanized steel roof was used for the next experiment and when the lightning was turned on it struck the roof and ran down a grounded lightning cable, being carried off without in any way injuring the wooden structure or the hay inside.

(5) The above experiment was repeated with a terne plate roof with exactly the same result, the current being turned on for an indefinite length of time without any harm to the roof, the wooden structure or the contents.

time without any harm to the roof, the wooden structure or the contents.

As the metal roofs were being tested the flame could easily be seen following down the roof to the copper downspout, down it and passing off in a blue blaze some 3 inches in length and approximately ¼ inch in diameter. Immediately afterward the metal roofed barn was turned upside down, the removable bottom taken out and a careful inspection made of the contents to determine if there was an evidence of fire. None was found.

At the conclusion of Mr. Clautice's talk, George E. Cruscoe gave an address with blackboard demonstrations of Short Cuts in Mathematics.

Dana A. Jones, secretary Manufacturers' Association of Erie, spoke on the topic of cooperation.

Then came the report of Secretary W. F. Angermyer, which is as follows:

### Report of Secretary W. F. Angermyer.

As only six months have lapsed since our last convention at Reading, your Secretary's report will be necessarily brief.

In connection with the campaign of the National Association for new members, we mailed letters and blank applications to all local associations and individual members. Also mailed letters to 800 non-members with applications, overhead expense folders, and a copy of proceedings of the Reading convention. The total result was two new members.

This experience, following similar results during the past two years, convinces your Secretary that some other method must be adopted to secure new members.

The Distributors' and Salesmen's Auxiliary organized at Reading may be the solution, but it seems to me that every member of this Association should appoint himself a committee of one to see his neighbor sheet metal contractor and secure his membership.

We must do one of two things—double our present membership or increase our dues.

As, at present, we can only mark time. We have at least two cities in our state in which there are more sheet metal contractors than in our entire membership. There are hundreds of other cities in which local associations of from 8 to 25 members could and should be organized.

I would recommend the dividing of the State Association into four or more zones with one good man in charge of each zone, he to name his own assistants to canvass the sheet metal men in his zone or district, with the object of doubling our membership before the National Convention at St. Louis.

This, with the aid of the Auxiliary and good men with the interest of the Association at heart, should be successful.

You will notice in membership report a greatly reduced number of individual members. This is due to local associations being formed and the individual members transferred to the local class.

This is desirable, and wherever possible, if an individual member is located within twenty or even thirty miles of a good local association, he should be transferred to the local nearest his place of business, and as we have done in Pittsburgh, admit him on the payment of State and National tax only.

Fellow members, your officers should and must have your help. Our success depends upon it. Would like an expression from the membership at this convention.

### Friday, July 28, 1922.

The morning session of Friday opened with an address on "Compensation Insurance," by LeRoy Wood, secretary of the Manufacturers' Casualty Company.

He was followed by Edwin L. Seabrook, secretary National Association of Sheet Metal Contractors, who delivered a highly instructive discourse on the necessity and advantages of organization.

W. C. Markle, chairman of the Trade Development Committee of the Sheet Metal Contractors' Association of Pennsylvania, then gave the report of his committee as follows:

### Report of Trade Development Com-

Your Trade Development Committee has not been particularly active during the past six months as the Committee of the National Association is so thoroughly covering the field in the preparation of a hand book for the use of architects and sheet metal contractors.

You, no doubt, are familiar with the progress of the work of that committee through the report made by its chairman, Mr. Paul F. Braudstedt, at the convention of the National Association of Sheet Metal Contractors at Indianapolis. As those of you who were unfortunate enough not to attend the convention have had ample opportunity to read the report published in the various trade journals, we will not go into detail as to the work that is being accomplished by that committee.

We want to impress on you this one important fact: the Trade Development Committee cannot develop your trade or business for you; that is a matter for each and every one of you to do as individuals.

The committee can make suggestions or recommendations to this convention but unless the members as individuals make use of these suggestions when they return to their places of business, nothing worth while will have been accomplished except, perhaps, the fact that we have all had a holiday away from business.

Why do we need trade development now?

First. Because in the past we have not realized the importance of salesmanship in our line of business; we have taken it for granted that if a customer wants a tin roof put on he will naturally call up "some tin shop" and give an order for the work to be done, but we have learned, to our sorrow, that today a very small percentage of metal roofing is being applied, that prepared roofing of many kinds have been given national publicity and can be purchased from mail order houses, hardware stores and in some cases from corner grocery stores, and can be applied by a handy man.

Second. Because of keen competition and unfair practices on the part of roofing contractors in using the cheapest quality of tin on roofs which failed within a few years' time, composition roofing has practically eliminated tin as a roofing material for high class buildings, when, as a matter of fact, we know that a good grade of tin properly laid and given proper care will outlast a composition roof, and in case of damage to the roof can be more quickly and economically repaired. This again is a question of salesmanship. In this case it is necessary to sell the architect by giving him the necessary information which we as practical sheet metal contractors can furnish him.

Third. Because in the past cornice work has been done in so careless or incompetent a manner that it has been replaced by terra cotta, stone or concrete, either of which add considerably to the weight on the walls and to the cost of the building.

In order to develop this branch of our business it will require salesmanship of a high order and yet, I feel sure that any one of you could tell an architect why a metal cornice would be better than a stone or other heavy type of cornice.

Fourth. Because we have been indifferent to our best interests, the "jurisdictional dispute" has become an important factor in larger building operations and some general contractors buy hollow metal windows, doors and trim direct from the manufacturers and do the installing with carpenters. And in a recent issue of one of our leading trade journals there was a lengthy article headed, "Who Is Going to Lay Metal Shingles, the Carpenter or Sheet Metal Man?" If you have not read this article, do so by all means; then you must answer the question for yourself.

If you want to lay the metal shingles you must "sell" them; if you don't, the carpenter will.

From the foregoing we hope we have made it clear that the development of the sheet metal trade is up to us as individuals, and with the national advertising campaigns being conducted by the manufacturers of high grade galvanized sheets, copper and zinc there never has been such an opportunity to make rapid strides in trade development as right now.

Talk sheet metal work to your customers, your architects, and last and most important, to your worthy competitors, in this connection in an effort to elevate the standard of sheet metal construction to the high plane from which it has fallen through inferior work.

The whole scheme of trade development can be summed up in six words: "Go out and sell the goods."

After the report of the Trade Development Committee, the reports of the Overhead Expense and Resolutions Committees were read to the convention.

Discussion of warm air heating and its possibilities occupied the remainder of the morning session.

In the afternoon the convention was devoted to a meeting of the Distributors' and Salesmen's Auxiliary at which all the Auxiliary officers were re-elected, as follows:

#### Auxiliary Officers.

President: Thomas R. Cook, Jr. First Vice-president: Warren Carter.

Second Vice-president: C. J. Besore

Secretary: Oliver C. Brooks. Treasurer: W. J. Gowern, Jr.

# Greenberg Discourses Instructively on the Two Kinds of Salesmen Who Make or Break the Dealer's Business.

There Is the Salesman Who Wants to Sell You Something, and There Is the Salesman Who Helps You Buy Goods.

Written Especially for American Artisan and Hardware Record by J. C. Greenberg, Cleveland, Ohio.

WHAT relation is the salesman to you as a business man? What role does he play in your success? Did you ever stop to figure this out? First, you must divide the real salesman from the ordertaker. You must make a line of distinction. There is a vast difference between the two classes. In order to buy right, you must pick your salesmen.

Now, then, amongst real salesmen there are two classes. There is the salesman who wants to sell you something, and there is the salesman who wants to help you buy something.

Please read this over again.

The salesman who wants to sell you something has a selfish motive, while the salesman who wants to help you buy something really has your interest at heart.

It follows logically that when one wants to help you buy his goods he must consider, and does consider, that you are his friend and the better you buy the better a customer you are. He has right business judgment and you get the benefit of his good judgment.

The great question then is, how to tell the difference between the two classes—how to pick your friend from the man who merely wants your money. This is easily done by a little study of the motive of the salesman.

The first class of salesman, that is, the one who merely wants to sell you is always talking price in his sales talk. He always wants to impress upon you that the cheaper you buy, the cheaper you can sell.

This at first glance seems true, but it is a great fallacy. The law of natural compensation plainly says that a dollar will buy only a dollar's worth, and that no manufacturer can afford to give you more for a dollar than the dollar is entitled to.

A cheap price always is lacking quality and quality is the most essential factor in successful business.

You can not build up a successful business with cheap goods. I do not here infer that cheap goods are bad. Many cheap articles that are cheap are really good.

Take for example the five and ten cent stores. They have builded a great business and their goods are legitimate. But they never in one instance have claimed that a ten cent article is as good as a fifty cent article.

But when a salesman tells you that a cheap piece of goods is as good as a competitive higher price goods he naturally misrepresents his article in order to deceive you.

He tries to argue that the law of natural compensation is not true.

He will tell you that his firm can sell you at a cheaper price because they do not advertise, or that they are satisfied with smaller profits.

This can not be, because it is not logical. A nationally advertised article so increases its sale, and the demand so increases the output that the more they make the cheaper it can be made, and is, therefore, sold at a cheaper price.

It reduces the overhead of the manufacturer and he sells in greater quantities.

The argument that they are satisfied with lesser profits is a lie. No manufacturer or jobber can afford to stay in business at a lesser profit.

Take the instance of the sheet metal man who thinks that he can do business at a little profit, and see where he gets off.

To illustrate this point, let me cite this little poem:

Count the day lost

When the low descending sun Shall shine on goods that sold at cost,

And business done for fun.

Do not buy price because you can not sell price. The word cheap is a low grade business policy because it always lacks quality and is not a healthy business argument.

Now, then, let us take up the salesman who really wants to help you buy something.

He will talk quality first. He will talk prestige of having a satisfactory article, he will explain to you the uses and advantages of the goods, and will show you how you can turn the goods into real profit for yourself.

He will help you choose the right quantity of the order and will advise you how best to market it. He realizes that in order to succeed as a salesman he must get your business continuously and profitably and at the same time give you satisfaction.

He knows full well that you are the bread and butter of his concern, and that they expect to have him make you into a good successful customer.

He will never overload you, because he knows you will have satisfaction and will buy again. He will not offer you extra terms, or allow freight for nothing.

No man ever lived that can afford to give you one single thing for nothing. You pay for everything in the long run.

A guarantee is only as good as the firm that gives it, and no real salesman will make any statement that his firm will not stand behind.

Do not buy talk. Do not buy terms. Buy goods.

I can give no better example than

the one about paint. I am not in the paint business but I do know that in this one item the sheet metal man has lost thousands of dollars because he has bought price.

Remember that your future reputation, yes, your very success, depends on giving your customers satisfaction.

In order to do so, you must keep away from cheap goods. Be a quality business man and keep away from the hounds that sell you something just as good for less money.

Pick your salesman, pick your selling friends, and place your implicit faith in them after you have satisfied yourself about their honesty.

The Salesmen's Auxiliary is composed of very fine gentlemen who help you and your association. There may be a few who are not right, but as a rule they are your friends.

You should pick your salesmen as you pick your social company, because they are in reality your business advisors and want to see you get along.

If a salesman hooks you only once, it was done with intent. Cut him out. If a salesman blames his salesmanager for a bad deal, do not believe him. He is always shifting the buck.

No man can be dishonest only once. It is in him, and he will hook you a second time if you let him do so.

Rest assured that the real salesman will let you know by acts and deed how his reputation is, and how his house stands.

Most sheet metal men buy entirely from too many firms. They scatter their business over too large a field and are not real good customers to anyone.

Concentrate your business. Have fewer firms, and your chances to get in bad are lessened.

Play safety first and begin to grow into a real buyer that really counts.

Remember that the salesman who wants to help you buy his goods is better than the hot air merchant who talks a lot and gives you very little for your money. Pick your business advisors.

### Notes and Queries

### "Torrid Zone" Furnace.

From D. O. Rynerson, Jetmore, Kan-

Can you furnish me with the name and address of the manufacturers of the "Torrid Zone" warm air heater?

'Ans.—Lennox Furnace Company, Marshalltown, Iowa.

### Sheet Metal School.

From George E. Roesch, 386 New York Street, Aurora, Illinois.

Will you please give me the name of a good trade school that gives courses in sheet metal work?

Ans.—St. Louis Technical Institute, 4543 Clayton Avenue, St. Louis, Missouri.

### Floor Coverings.

From W. F. Kasbohm, VanWert, Ohio. Kindly give me the names of firms that make floor coverings that will make floors look finished.

Ans.—Flexotile Floor Company, Rockford, Illinois; E. E. Davis Company, 608 South Dearborn Street; Williams-Wendt Company, 118 North LaSalle Street; Rezlite Manufacturing Company, 122 South Michigan Avenue; all of Chicago, Illinois.

### Truck Wheels.

From A. E. Browder, Albion, Nebraska.

Please inform me where I can
get 6-inch truck wheels with 5/8inch hole.

Ans.—Motor Rim and Wheel Manufacturers Company, 2012 South Wabash Avenue; and Automotive Wheel Service, 577 East 35th Street; both of Chicago, Illinois.

### Fire Fighting Apparatus.

From Joseph Werndl, 213 East 12th Street, Coffeyville, Kansas.

Who makes fire fighting apparatus, such as pumps, ladders, and hose?

Ans.—American LaFrance Fire Engine Company, 1827-29 South Michigan Avenue, Chicago, Illinois, can supply you with all these items.

1. Geo. W. Diener Manufacturing Company, 400 Monticello Avenue. Chicago, Illinois; Dayton-Dowd

Company, Quincy, Illinois, and Northern Fire Extinguisher Company, 2422 University Avenue, Southeast, Minneapolis, Minnesota.

2. Safety Fire Extinguisher Company, 295 Seventh Avenue, New York City; George C. Hale, Kansas City, Missouri; and Robinson Fire Extinguisher Company, 4268 North Twentieth Street, St. Louis, Missouri.

3. Bi-Lateral Fire Hose Company, 325 Lee Building, Kansas City, Missouri; Chicago Fire Hose Company, 124 West Lake Street, Chicago, Illinois.

### Rustic Iron Seats or Benches.

From W. P. Brown and Company, Blue Rapids, Kansas.

Will you kindly tell us where we can get rustic iron seats or benches, such as are used in cemeteries.

Ans.—F. P. Smith Wire and Iron Works, Clybourn and Fullerton Avenues, Chicago, Illinois.

### "Economy" Fruit Jars.

From Haas Plumbing Company, El Paso, Illinois.

Can you tell us who makes the "Economy" fruit jars.

Ans.—Kerr Glass Manufacturing Company, 481 Davis Street, Portland, Oregon.

### Store Fixtures.

From Lesan Tin Shop, Guthrie Center, Iowa.

Please tell me who makes store

Ans.—American Store Fixture Company, 121 South Halsted Street; Chicago Store and Fixture Company, 818-820 South Clinton Street; The Newton and Hoit Company, 1018 North Paulina Street; all of Chicago, Illinois, and Cryster and Koppin Company, 819 West Warren Avenue, Detroit, Michigan.

### Iron and Wood Belt Pulleys.

From Joseph Werndl, 213 East 12th Street, Coffeyville, Kansas.

Will you kindly tell me who makes wood and iron belt pulleys.

Ans.—Chicago Pulley and Shafting Company, 40 South Clinton Street; Reeves Pulley Company, North East Corner Clinton and Monroe Streets; R. R. Street and Company, 28 North Clinton Street; and W. A. Jones Foundry and Machine Company, 4401 West Roosevelt Road; all of Chicago, Illinois.

# Descriptive Index and Guide to New Patents.

Improved Devices Which May Save Labor in Your Shop or Add Another Source of Income to Your Retail Store.

1,419,300. Washing Machine. Frank E. Ormsby, Chicago, Ill. Filed July 21, 1921.

1,419,306. Indicating Surface Gauge. William H. Reisner, Hagerstown, Md., assignor to The L. S. Starrett Company, Athol, Mass., a Corporation of Massachusetts. Filed Apr. 7, 1921.

1,419,312. Propelling Attachment for Children's Vehicles. Frederic S. Seagrave, Detroit, Mich. Filed Oct. 13, 1919.

1,419,330. Electric Heater. Frank G. Van Dyke, Detroit, Mich. Filed Dec. 19, 1921.

1,419,391. Wrench. Nils G. Larson, Attleboro, Mass. Filed Feb. 19, 1920.

1,419,404. Wrench. Charles A. Olson, Jamestown, N. Y. Filed Apr. 29, 1921.

1,419,427. Washing Machine. Reuben D. Tittle, Springfield, Ohio. Filed Mar. 2, 1921.

1,419,432. Lathe Tool. Edward J. Willis, Richmond, Va. Filed Sept. 2, 1020.

1,419,438. Damper. Burleigh F. Annis, Chattanooga, Tenn. Filed Oct. 21, 1921.

1,419,523. Can-body-forming machine. Peter Kruse, Brooklyn, N. Y., assignor to E. W. Bliss Company, Brooklyn, N. Y., a Corporation of West Virginia. Filed Feb. 24, 1920.

1,419,582. Humidifier for Heaters. Robert Nicholas Murphy, Ottawa, Ontario, Canada. Original application filed Sept. 25, 1918, Serial No. 255,700. Divided and this application filed Apr. 21, 1919, Serial

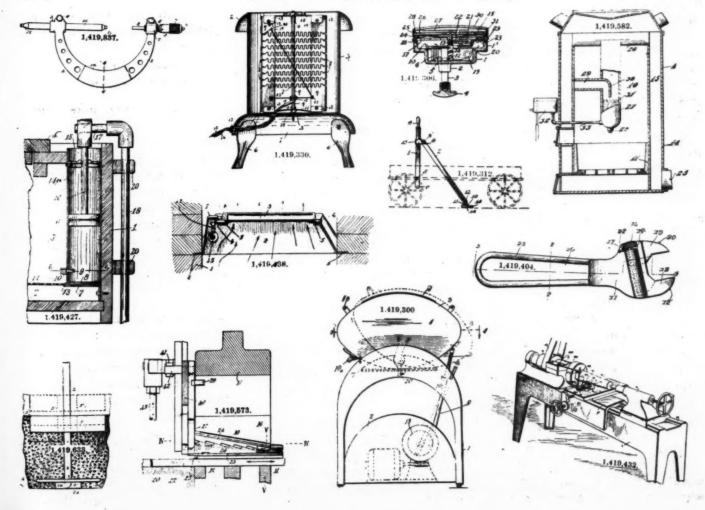
No. 291,709. Renewed Apr. 22, 1922.

1,419,633. Metal Fencepost. Orville M. Knox, Knoxboro, N. Y. Filed Sept. 30, 1921.

1,419,837. Micrometer Calipers. Louis Flachskampf, Lost Creek No. 2, Pa. Filed Dec. 26, 1918.

If you have a man working for you who is not fired with enthusiasm and you cannot fire him with enthusiasm, then promptly fire him with enthusiasm.

The man whom the world terms "lucky" is merely the one who is always prepared to grasp an opportunity when it presents itself. With two years to prepare, there are still men who are unprepared for prosperity.



# Review of Conditions in the Metal Markets.

### General Situation in the Steel Industry. Report of Prices and Tendencies in Sheet Metals, Pig Iron, etc.

### COPPER PRODUCERS HOLD PRICES FIRM.

The large copper producing interest which holds the bulk of domestic stock continues to ask 14 cents.

Home consumers generally are well supplied for July and August needs, but small melters are still buying from time to time and are paying 14 cents for prompt July and August shipment.

However, occasional lots are quoted at 13.87½ cents delivered

Brass mills and wire drawers continue active, taking a larger tonnage of copper than ever before in peace times.

Price cutting on rolled products has become less general, especially as mills are booked two or three months ahead and now are able to discriminate, picking out more profitable business.

Deliveries of some lines, such as certain sizes of seamless tubes, are behind three months, with some mills.

The statistical position is strong. Since the first of the year deliveries into domestic and foreign consumption have exceeded refined output by an average of 40,000,000 pounds a month.

While the reduction during the next six months will probably not average over 20,000,000 pounds a month, it will still mean a further strengthening of the position of producers.

Copper wire sales continue satisfactory. Public utilities are buying cable, conduits and wire. One manufacturer says:

"Copper wire sales are better today than they have been in nearly two years. The recent increased demand was due largely to buying by public utilities. Considerable new development work was undertaken this Spring.

Much of this work had been de-

layed because of the business depression. We believe that the major part of this business has been placed and that we are at present receiving only supplementary orders and to replenish stock. With a fairly firm copper market it is only natural to expect consumers to increase stocks.

"Electrical dealers continue to buy fair amounts of wire, chiefly for building purposes, but a number of electricians are also selling radio sets in addition to their regular business,

"Despite the static interference caused by the hot weather we do not notice a slump in the sales of radio wire and materials generally.

"Prices are too low, however, to be profitable. This is because of the fact that some wire drawers are not taking a fair margin of profit.

"We can not understand how such conditions prevail when there is plenty of business to be had, but hope this state of affairs will be changed shortly."

#### Tin.

Notwithstanding the serious situation which is confronting American industries through the coal and railrod strike, London continues bullish on tin.

There is strong probability of a further advance, higher prices being expected on account of speculative activity.

Probably owing to the character of these advices, the market, although extremely dull on consuming business, has turned active on Straits tin and 99 per cent tin for dealers' account.

In the Chicago market, prices advanced % cent per pound during the week.

A pronounced scarcity of 99 per cent tin has developed.

The American producers are entirely sold up and the small lots on spot have been cleaned up; although a steamer arrived this week with a supply of No. 1 Chinese tin, there is apparently none of it for sale for the general market.

#### Lead.

Shipments of lead on contracts continue at a high rate.

Some holders of resale lead have been anxious to dispose of their commitments and sales of Missouri lead were reported down to 5.35 cents, East St. Louis.

The producers generally have declined to follow the market down that level and their sales, despite the recent reported slackness of demand, have made up a very satisfactory aggregate for July and August shipments.

Some of the cutting in price has 'een attributed to forcing tactics or short selling.

There were 400 tons of refined lead and 100 tons of base bullion imported from Mexico Tuesday, July 25th.

Joplin advices state that the demand for lead ore continues brisk in spite of strike trouble.

Joplin lead ore shipments last week were 1,772 tons, as against 1,567 tons the week previous, while shipments since the first of the year totaled 52,224 tons, as compared with 34,038 tons during the corresponding period last year.

High-grade ore is quoted at \$84.05 and the 80 per cent grades from \$77 to \$80 a ton.

#### Solder.

Chicago warehouse prices on bar solder are as follows: Warranted 50-50, per 100 pounds, \$22.00; Commercial 45-55, per 100 pounds, \$20.50; and Plumbers' 40-60, per 100 pounds, \$19.25.

### Zinc.

Demand for zinc from consumers is not heavy, the principal buying interest being from operators, but a very fair number of consuming orders are being booked right along in spite of the uncertainties of the situation.

These orders are mainly for early shipment, and urgency is shown, evidently in view of the traffic difficulties.

The facilities for movement are, of course, none too good at the present time and producers are experiencing trouble in getting shipments of ore.

Zinc in slabs went up 20 points in the Chicago market and is now quoted at \$6.60 per hundred pounds. Sheets.

The turnover in sheets has undergone a further decrease, making the market decidedly quiet in point of tonnage of sales.

The majority of mills are not in position to take on any more tonnage for shipment in the next couple months, on the basis of the production they are likely to have.

The best guess at the moment seems to be that the sheet industry as a whole will be able to produce at about 75 per cent of capacity in, say, the next two months, and practically all of this tonnage is sold.

Consumers are taking deliveries very well, and seem likely to continue to take deliveries as rapidly as mills can ship.

Consumers are not exhibiting any uneasiness, as a rule, as to getting deliveries, but a few exhibit a desire to purchase additional tonnages for early delivery, and it is only here and there, at best, that any such purchases can be made at basis prices.

Mills able to enter orders for early delivery are quoting premiums, while for late delivery basis prices are the rule.

An odd circumstance is that a few sellers have two prices, one for guaranteed delivery in the near future, and another for indefinite delivery.

Blue annealed sheets advanced in the Chicago market from \$3.38 to \$3.75.

### Tin Plate.

Additional orders of considerable size have been placed for tin plate for the canning crops, making the tin plate market more active this month than was expected.

Consumers generally had been decidedly forehanded, having fears as to deliveries on account of the coal strike, and on July 1st were several weeks ahead of normal in their receipts.

This should have made the tin plate market decidedly dull this month, and such activity as is now seen is to be attributed to the crops turning out even better than expected.

The market remains firm at \$4.75 per base box, Pittsburgh.

### Old Metals.

Wholesale quotations in the Chicago district which should be considered as nominal are as follows: Old steel axles, \$15.50 to \$16.00; old iron axles, \$21.50 to \$22.00; steel springs, \$15.50 to \$16.00; No. I. wrought iron, \$13.50 to \$13.00;

No. 1 cast, \$15.50 to \$16.00, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper,  $8\frac{1}{2}$  cents; light brass,  $4\frac{1}{2}$  cents; lead,  $4\frac{1}{4}$  cents; zinc,  $2\frac{1}{2}$  cents; and cast aluminum, 12 cents.

### Pig Iron.

Consumers of pig iron appear to be almost a unit in abstaining from making purchases or even putting out inquiries, while at the same time producers are indisposed to name asking prices.

Transactions are quite infrequent and those that do occur are more often than not between points so located that the sale price can not be figured back to a Pittsburgh or valley basis. Therefore, the transactions do not mean anything as to the general market.

Furthermore, as just indicated, the market can not be quoted on a bid and asked basis.

# The Railroads Are Placing Orders for More Equipment, Involving Considerable Tonnage.

Other Consumers of Steel, however, Are Buying with Unusual Caution in the Face of Present Conditions.

A PART from its troubles, the feature of the steel market is the placing of large orders for equipment with merchant shops, followed by heavy commitments on the part of the shops for steel with the mills.

The Baldwin Locomotive Works is in the market for between 25,000 and 30,000 tons of steel plate.

The Illinois Central divided an order for 65 engines among three interests, involving some \$3,000,000. The Baltimore & Ohio placed an order for 75 locomotives, the Reading for 25 and the Delaware, Lackawanna & Western has ordered 30 locomotives of the American Locomotive Company.

The Baltimore & Ohio has also contracted for repairs to 5,000 freight cars.

So far this month the carriers have, ordered more than 8,000 cars

and are taking figures on as many more, and the former alone will require from 25,000 to 30,000 tons of steel.

The Nashville, Chattanooga & Tennessee has purchased 1,000 cars and the Pittsburgh & West Virginia ordered 1,000 hopper cars from the Cambria Steel Company.

The buying of coal in England is increasing and it is stated that already more than 500,000 tons have been purchased there for shipment to this country.

Many furnaces and steel mills have wholly or partially withdrawn from the market in the face of present conditions and consumers are buying cautiously.

Everybody seems to be waiting developments before transacting much new business and are concentrating their efforts toward getting orders shipped long overdue.

### Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

			The state of the s	-1 1/4 - 10c
	METALS	HARDWARE, SHEET	American Snallhead 1 76	Hay.
		METAL SUPPLIES,	Rose 2 00 Flat 1 40	Diamond, Regulareach, nets
	PIG IRON.	WARM AIR HEATER	Dowel	CASTERS
	Foundry \$24 00 to \$25 00	FITTINGS AND AC-	Russel Jenningsplus 20%	Standard-Ball Bearing.
Southern	Fdy. No. 24 00 to 26 00	CESSORIES.	Gimlet. Standard Double Cut Gross \$8 40	Ded
Lake Sur	p. Char-		Nail Metal Single	Brass Wheel Iron and porcelain wheels, new list Philadelphia Plate, new list
coal .		1 Table 1	CutGross \$4 00—\$5 00	Iron and porcelain wheels,
Malleable	e 24 00 to 25 00	ADZES.	Standard Square Doz. \$2 50	Philadelphia Plate, new
		Coopers'. Barton'sNet		Hst
FIRS	T QUALITY BRIGHT	White'sNet	No. 1 ComomnEach 18c No. 26 StanleyEach 70c	CATCHERS, GRASS.
1	TIN PLATES.	AMMUNITION.	No. 26 StanleyEach 70c	No. 1608per doz. \$12 25
	Per Box	Shells, Loaded, Peters.	Wood. BLADES, SAW.	NO. 165S FURNACE 14 01
IC	14x20 112 sheets \$10 00	Shells, Loaded, Peters. Loaded with Black Powder 18% Loaded with Smokeless	Nos 6 40 26  Nos 88 90 \$9 45 \$5 40  Diston 30-in.	No. 1685
IXX	14x20 11 35 14x20 12 60	Powder18%	Nos 6 40 26	" 25 lb, cans, " 1 27
IXXX	14x20 18 90	Winchester. Smokeless Repeater	Diston 30-in.	Asbestos, 5 lb. cans 45
IXXXX	14x20 15 25	Grade	38 90 39 45 35 40 Diston 30-in. Nos 6 66 26 39 45 \$10 05 \$9 45 BLOCKS.	10 lb. cans 90
IC	20x28 20 00	Smokeless Leader Grade	BLOCKS.	" 25 lb. cans " 1 87
IX	20x28 23 50	Grade	Wooden20%	Breast Chains,
IXX	20x28 25 26 20x28 27 80	U. M. C. Nitro Club	Patent20%	Titleb Cilde des mains as se
IXXXX	30x28 30 50	Nitro Club20 & 4% Arrow20 & 4%	BLOW TORCHES (See Firepots).	Without Slide 6 06 Doublestack 9 25
		New Club 20 & 4%	Stove, BOARDS. Per. Doz.	Doublestack 9 35 With Covert Snaps 6 33 Picture Chains.
1 07	COKE PLATES.	Gun Wads-per 1000.	26x26, wood lined314 45	Light brass, 3 ft., per doz. 1 26
Cokes, 18		Winchester 7- 8 gauge 10&7 4 % 9-10 gauge 10&7 4 % " 11-28 gauge 16&7 4 %	38x28, " " 16 95 30x30, " " 19 00	Light brass, 3 ft., per doz. 1 25 Heavy brass, 3 ft. 1 75 Sash Chain. (Morton's) Steel, per 100 ft.
Cokes, 20			26x26, paper lined 3 15	Steel, per 100 ft,
	14 lbsIC 20x28 12 35	ASBESTOS.		0 \$2 50 2 3 10 1 Champion Metal.
Cokes, 27	70 lbsIX 20x28 14 10	Rollboard	Wash. No. 760, Banner Globe	Champion Watel
		Paper up to 1/166c per lb. Rollboard6% c per lb. Millboard 2/32 to %6c per lb. Corrugated Paper (250 cr. ft. roll) 28 50 per roll	(single) per doz. \$5 25 No. 652, Banner Globe	
	ANNEALED SHEETS.	sq. ft. to roll)\$6.00 per roll	No. 652, Banner Globe (single)per dez. 675	2R 5 60 1R 7 76 Champion Metal.—Extra Heavy.
Base	per 100 lbs. \$3 75	AUGERS	No. 801, Brass King, per doz. 8 25 No. 860, Single—Plain	Champion Metal.—Extra Heavy.
3		Boring Machine 40&10%	Pump 6 25	Cable Sash Chains, \$9 50
ONE	PASS COLD ROLLED	Carpenter's Nut50%	BOLTS.	SteelList Net Plus 15%
0112	BLACK.	Hollow. Bonney'sper doz. \$30 00	Carriage, Machine, etc. Carriage, cut thread, %x6	Blue per gro. \$2 00
No. 18-20	per 100 lbs. \$4 25	Post Hele.		
	per 100 lbs. 4 20	Iwan's Post Hole and Well	Carriage sizes, larger and	White 1 86 Common White School
	per 100 lbs. 4 35	Vaughan's, 4 to 9 in., with-	longer than %x650 & 5%	014904 111111111
	per 100 lbs. 4 40	out mandles per doz. \$14 90	er and shorter 60 & 10%	In bagsper bag \$1 80
	per 100 lbs. 4 55	Brad. AWLS.	shorter	CHECK, DOOR.
		No. 3 Handled per doz. \$0 65 No. 1050 Handled " 1 40	20040	Corbin
	GALVANIZED.	Patent asst'd, 1 to 4 " 35	Mortise, Door. Gem. iron5%	CHISELS.
No. 16	per 100 lbs. \$4 70	Harness.	Gem, iron	Cold. Good quality, % in., each \$0 44 Diamond Point. % in., " 0 22 V. & B. No. 15, % in 0 22 V. & B. No. 15, % in 0 48 Firmer Bevelled. Round Nose. V. & B. No. 65, % in 0 23 V. & B. No. 65, % in 0 23 V. & B. No. 65, % in 0 34 Socket Firmer.
	per 100 lbs. 4 85	Commonper doz. \$1 05 Patent 1 00	CastNet	Diamond Point, in., 0 33
	per 100 lbs. 5 00	Peg.	Wrought	V. & B. No. 15, 14 in 0 22
	per 100 lbs. 5 15	Peg. Shouldered " 1 60 Patented " 75	Finsh.	Firmer Bevelled.
	per 100 bls. 5 30	Scratch.	WroughtNet	Round Nose.
	per 100 lbs. 5 95	No. IS, Socket Handledper dos. \$2 50	Spring.	V. & B. No. 65, 1/2 in 6 44
		Handledper doz. \$2 50 No. 344 Goodell- Pratt, list less35-40%	Wrought, heavy	
	BAR SOLDER.	No. 7 Stanleyper doz. \$2 25	Wrought	V. & B. No. 50, % in 0 23 V. & B. No. 50, % in 0 64
Warrante	4.	AXES,	BOXES.	CHICKS DRILL
50-50 .	per 100 lbs. \$22 00	First Quality, Single	Mail. No.: 2 4 10 Per dos.:\$18 00 \$23 00 \$29 00	Goodell's for Goodell's Screw
Commerci	ial.	Bitted (unhandled), 3 to 4 lb., per dos\$10 50	Cast Iron.	Vankes for Vankes Scraw
	per 100 lbs. 20 50	Good Quality, Single	Per doz\$9 50	Drivers
Plumbers	per 100 lbs. 19 25	Bitted, same weight, per doz	Mitre.	Anti-Bent Wood,
		BALANCES, SPRING.	Stanley's Net Prices Stearns, No. 2per doz. \$48 00	Gal
	ZINC.	Universal.	BRACES, BATCHET.  Godell-Pratt No. 408 \$4 60 " " No. 410 4 80 " " No. 412 5 00 V. & B. No. 444 \$ in 4 65 V. & B. No. 323 \$ in 4 30 V. & B. No. 11 \$ in 3 50 V. & B. No. 11 \$ in 3 55	Belle, Barrell 65 & 71/5%
In Slabs	6 60	Sight SpringList less 25% StraightList less 25%	" " No. 410 4 80	Common Dash, Gal
		BARS, WRECKING.	V. & B. No. 444 8 in 4 65	Per doz\$17 00 19 00
	SHEET ZINC.		V. & B. No. 333 8 in 4 30	Per doz\$17 00 19 00 Adjustable. Martin's
Cask lots	, stock	V. & B.       No.       12.	V. & B. No. 111 8 in 3 50	Martin's30%
Less tha	n cask lots	V. & B. No. 30 0 85	V. & B. No. 11 8 in 3 05	Cabinet.
		V. & B. No. 330 0 90	DUBBO, BIYEARIU.	Screw
	COPPER.	BEVEL, TEE.	Copper Burrs only50% Tinners Iron Burrs onlyNet	Carpenters'. Steel Bar. List price plus 20%
Copper S	heets, base20%c	Stanley's Rosewood handle, new list	Steel, antique copper or dull	214 sinch per dos \$ 7 80
		Stanley fron handle Nets	brass finish—case lots—	5 - " " 14 00
	LEAD.	BINDING CLOTH.	4x4 2 80	12 - " 42 00
merican	Pig 6 00	Zine55%	brass finish—case lots— 3½x3½per dozen pairs \$2 75 4½x4  Heavy Bevel steel inside sets, case lots—	Sharman's brass Wainch
Bar	75	Brass, plated	Steel bit keyed front door	per doz. \$\frac{1}{20}\$ 48  Double, brass, %-inch, per 1 20
lhoot.		BITS.	Steel bit keyed front door	Double, brass, %-inch, per doz
	ilsper 100 lbs. 9 00	Auger.	Wrought brass bit keyed	Saw Filers.
Cut col	laper 100 lbs. 9 25	Jennings Pattern Net Ford Car 25% off Ford's Ship 25% off	Cylinder front door sets.	Wentworth's, No. 1, \$12.50; No. 2, \$18.25; No. 3, \$16.25.
2	24.5	Ford's Ship25% off	each 7 00	CIT ATTIO TACK
3.11	TINper lb. 36%c	Irwin	Double CALIPERS. Net	Wood hdl. No. 10. per doz. \$1 15 Forged steel, wood hdl. \$2 15 Solid steel
			DoubleNet Inside and Outside	Solid steel " 3 26
sar tin	37%с	Center10%	Wing	Giant

CLEVISES.	ELBOWS—Stove Pipe. 1-piece Corrugated, Uniform	HAMMERS, HANDLED.	Awning, No. 60Net
Malleable10c lb.	5-inch		Belt.
CLIPPERS.	6-inch 1 40	26-02	Brown's
	. 7-inch	Machinists', No. 1, 7-02 1 06	Bex.
No. 1	Dos.	Vanadium, No. 41, 20-oz.	No\$0 29 0 77 0 36
CLIPS.	6-inch	each 1 45 Vanadium No. 41 14, 16-oz.,	Bush. Common Axe Handle,
Axle	Uniform, Collar Adjustable	v. & B., No. 11½, 16-oz.,	per dos\$20 00
Asma with tail pleces.	5-inch	each City, No. 11114, 16	Inch ¼ ¼ 5/16 7/16 % Pr. 100 \$7 60-8 10 9 75 11 50 12 66
per doz\$1 25 Non Rivet tail pleces, 25	7-1ncn 3 20	oz., each	Clothes Line.
Non Rivet Clips 90	FACES, WOOD—50% off list. FENCING.	Tinner's Riveting, No. 1, 8	Japannedper doz. 35c—1 66 Galvanized 65c—2 21
Hame " 50e	Lawn fence, single space.	Shee, Steel, No. 1, 13 oz., each	Conductor.
COLLARS, STOVE PIPE.	36-inch	Tack. Magnetic,	Conductor hooks20-10% MilcorNet
Inches 5 6 7	Lawn fence, double space.	No. 5, each 1 00	Corn.
Fancy pattern, per doz65c 75c \$4 00	82-inch 12 60	Farriers'	Common, riveted, red, per ds. Net Little Giant
COMPASSES.	42-inch 13 75 Field fence, 26-inch, No. 10 top and bottom 12 filling 26 50 Same, 6 filling 33 83 Field fence, 32-inch, No. 15 top and bottom 13 filling 30 34 Same, 6 filling 30 34	Mason's. Single and Double Face50%	Common Nos. 1 2 5 7
Carpenters'15%	top and bottom 12 filling 26 50	HANDLES.	Common Nos. 1 3 5 7 Per doz \$4 25 3 25 3 40 8 60
COPPERS—Soldering. Pointed Roofing.	Field fence, 32-inch, No. 10	Agricultural Tool. 4½-inch, plainper doz. \$3 50	With plateper doz. \$1 00
2 lb. and heavierper lb. 40c	Same, 6 filling 39 41	Auger.	With plateper doz. \$1 00 with screw
34 lb 445c 134 lb 55c 1 lb 60e		Pratt's Adjustable. Nos.  1 & 2, per doz 6 00  Ives' Adjustableper set 1 35	Potato and ManureNets
1% lb	American	Ives' Adjustableper set 1 35	HOSE. Per Ft.
CORD.	Heller's (American)		%-inch molded reel13 % e %-inch 3 ply duck13 % e %-inch 4 ply duck16c
Picture. White Wire60 & 5%	Eagle 60-10% Great Western 60 & 10% Kearney & Foot 60 & 10% McClellan 60 & 10% Nicholson 50-10-10%	Hickory, No. 1per doz. 3 00 Hickory, No. 2 00 1st quality, second growth 6 00 Special white, 2nd growth 4 50	4-inch 4 ply duck16c
Saab.	Kearney & Foot 60 & 10% McClellan 60 & 10%	Special white, 2nd growth 4 50 Chisel.	%-inch 5 ply multiple10% e
Spot No. 7per lb. 65c Common, No. 7 40c	Nicholson	Hickory, Tanged, Firmer Assortedper doz. 55c	Sad.
COTTERS, SPRING.	Simonds	Hickory, Socket Firmer, Assortedper doz. 70c	Charcoalper dos. \$11 00 Common, polished, per
All sizes87%%	FIRE POTS.	Coal Pick	100 lbs
COUPLINGS, HOSE	Clayton & Lambert's-	File, assortedper doz. 30c	Common, nickel plated 8 38
Brassper dos. \$2 25	East of west boundry line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Ne-	Coal Fick 40% Drifting Fick 40% File, assorted per doz 30c Hammer and Hatchet. No. 1, per doz	Mrs. Pott's, No. 50 J. Enterprise, per set Nets
Standard gauge35%	braska, Kansas, Okiahoma, Amarillo, San Angelo and La-	Second growth hickory, per doz.	No. 55 J. Enterprise, per set Nets No. 55 J. No. 50 T.
26 gauge20%	redo, Texas	doz	No. 55 T. " "
Glass.	line	Serew Driver,	Wagon, JACKS.
Red DevilNet	Turner Brass Works-	Assortedeach 6c Shovel and SpadeNet	Richard's No. 1. per doz. \$15 56
Enterprise—Nos. 5 10 12 Each\$2 50 \$4 25 \$8 75 Nos. 22 22 Nos. 25 50 \$8 50	No. 43 Kerosene-Gasolene Master Torch, 1 qt\$5 40	HANGERS.	Oliver, \$0 60 \$0 \$0 \$0 Nos. 0 00 Standard,
Nos. 22 32	No. 48 Kerosene-Gasolene	MatchlessNet	Standard,
Kipe.	Master Torch, 1 qt 6 78 No. 95 Double Jet Torch, Gasolene, 1 qt 6 95	Reliable	Nos 1
Saunder's, Nos. 1 2 3 Each\$1 85 2 75 6 75	No. 30 Kerosene-Gasolene	Garage Door Hdw.)	Each \$0 60 \$1 00 Nos. 1 2. Big Lift 60%
Shw and Kraut. Per doz. 4-knife Kraut\$20 00-55 00	No. 33 Single Jet Gasolene	Conductor Pipe. Iwan's Perfection50%	TO THE PARTY TO SEE
4-knife Kraut\$20 00-55 00 3-knife Kraut, 8x27 in	No. 33 Single Jet Gasolene Torch, 1 qt	Milcor PerfectionNet	Brass 15% Cauldron 40&5% Copper per lb. 17 Maslin 40&10% Sugar 50%
1-knife Slaw 2 50 2-knife Slaw 3 00	with Bulb, 7 pts 6 75	Eaves Trough, Steel hangers	Maslin
Washer 11 00	No. 63 Galv. Iron Tank with Pump, 7 pts7 47	Triple twist wire 10% Milcor Eclipse Net Milcor Triplex Net Milcor Milwaukee Net	
DAMPERS, STOVE PIPE.	No. 56 Straight Side Steel Tank with Bulb, 7 pts. 8 82	Milcor MilwaukeeNet	KNIVES. Beet Topping.
6-inchper doz. \$1 50	No. 66 Straight Side Steel Tank, with Pump, 7 pts. 9 54	HASPS. Hinge, Wrought, with staples, Net	Beet Topping. Clyde, 9-in. Scimiter Blade, dos
DIGGERS	GALVANIZED WARE	HATCHETS.	California
Post Hole. Iwan's Split Handle	Pails (Competition), 8-qt1 65 10-qt1 85 12-qt2 00 14-qt2 30 Wash tubs, No. 15 20	Size No. 2 extra quality	Deschwood Wandles & Inch
(Eureka) 4-ft. Handleper doz. 15 00	12-qt	broad	blade Beechwood Handles, 7-inch
7-ft. Handleper doz. 20 00	14-qt. 2 30 Wash tubs, No. 1 5 30 No. 2 6 00	No. 2 Warranted Shingling 12 00 Competitive Forged 8 00	Reachwood Handles, 3-inch
Iwan's Hercules pattern, per doz 18 00	No. 2	HAY RACK BRACKETS	Cooper's Hosp25%
Dividers, Wing	GARAGE DOOR HARDWARE	Wenzleman's No. 1 per doz. sets \$18 00  Wenzleman's No. 2	Drawing.
Bench,	GAUGES.		Standard
Blacksmiths' Twist (New List)	Marking, Mortise, etcNets Wire,	HINGES,	
React	Disston's GIMLETS.		Iwan's Solid Socket
Millers Falls No. 12, per doz. \$45 50	Discount	No. 1per set 45c No. 288c	Iwan's Imp'd Serrated25% Hedge.
doz	Single Strength, A and B,	Gate. Clarks 1 2 3 Hgs. & Ltch, ea. 85c 1 10 2 40	Challenge
Hand.	all sizes	Hgs. & Ltch, ea. 85c 1 10 2 40 Hinges only—	Putty.
No. 01each \$1 60	BII BIZES	Hinges only— Upper\$1 25 Lower	Common
No. 03	Bulk.		Seraping. Beech Handle25% Lander's25%
Reciprocating. 4 00	B Amberper lb. 35c A white	No. 1 each 28c No. 2 28c Screen Door.	
Reciprocating. " 3 20	Liquid.	1751—3x3doz. \$2 00 1753—2½x2½ 1 95	Door.
StandardNets	Army & Navy	Spring. ChicagoAdd 10% to list	Mineralper dos. \$2 00 Porcelain 2 00 Jet 2 04
EAVES TROUGH.	Le Page's— List "A"	Gem	LADDERS.
79% of Standard List. Net	List "C"25 %	New Idea per gross \$6 90	Step.
ELBOWS-Conductor Pipe.	Wood Boxes.	Wrought Iron. Per 100 pairs with screws:	Common, per ft
Galvanized Steel, Tin and Terne Plain Round or Round Corrugated	Frazer's per gro. \$13 00 Hub Lightning 7 50 Wood Pails.	Heavy Strap Hinges, No. 4 15 75	IXL
2 to 6 inch, Std. gauge 65% 2 to 6 inch, 26 gauge 45% 2 to 6 inch, 24 gauge 20%	Frazer's, 15 1b. \$1.00; 25 1b.	Per 100 pairs with screws: Light Strap Hinges, No. 3 \$12 00 Heavy Strap Hinges, No. 4 15 75 Light T HingesNo. 3 12 10 Heavy T HingesNo. 4 20 07	
2 to 6 inch, 24 gauge 20% Milcor Net	\$1.50 each. Hub Lightning, 15 lb. 90c; 25	Extra Heavy T Hinges, No. 4 21 50	LANTERNS. Per dos.
Square Corrugated.		Screw Hook and Strap. 6 to 12 inper 100 lbs. \$7 75	Monarch tin, hot blast \$ 35 Dietz No. 2 cold blast 13 60
Standard gauge 50% 26 Gauge 30%	HAFTS, AWL.	Screw Hook and Strap.  6 to 12 inper 100 lbs. \$7 75 14 to 20 in" 7 50 22 to 36 in" 7 25 Screw Hook and Evo.	Competition lanterns No. 0
mileorNet	Commonper doz. av as	Screw Hook and Eye,	LEATHER, LACE. 6 66
Portice Elbows. Standard Gauge Conductor Pipe,	Peg. Patent, plain tep " 60 Patent, leather top " 80	14 in per doz pair \$2 00 % in 3 50 % in 6 00	tubular LEATHER, LACE. Rawhide %-inch100 ft. \$2 00 %-inch " 60
Not Nested	Common " 24	FEO.ES.	LEATHERS, PUMP.
Nested solid	Patent " 65	Garden	Valve and PlungerNet
6 54° s	200	to a constant of	34.1

J. 16.45	t	24 2 2 2 2	
	Water. Galvanized ets. 10 12 14 Per dos\$5 75 6 50 7 25	No. 1, 2 and 3per doz. 75c	Copper Belt50% Discount
No. 18, 20 in . each 1 83 No. 22, 24 in . each 2 40	Wood	POINTERS, SPOKE.	Tinners'
Dissection	Cable, 2-Hoop per doz. Nets Cable, 3-Hoop Nets Cedar, 3-Hoop, brass " Nets	Stearns' No. 1per dox. \$10 00 No. 2 12 00	Slotted Clinch per doz. 60 @ 1 10
" No. 9 Amst 13 40 " 24-26 ineach 1 02	PANS.	Wr't Steel, str't or bent,	Tubular. Nos. 1 and 2 assorted sizes,
" 28-30 ineach 1 00	Dripping PANS. Net	Nickel Plated, coll hanl's " 1 10	Nos. 1 and 2 assorted sizes
Stove Cover.	CommonNets	PRESSES, FRUIT AND JELLY Enterprise Manufacturing Co. 25%	10 in box
Copperedper gro. \$6 00 Alaska 4 75 Transom.		PRUNERS.	Cotton. %, 5-16 in. Com. on reels,
Payson's	Paxton, Nos	Disston's Pole per doz. \$18 00 Water's Improved, per doz. 60%	4. 5-16 in. Com., in colle
	Savory, No. 200. per doz. \$8 40	Nail. Giantper doz. \$14 50	Sign.
Simal		Giantper doz. \$14 50 Never-Slip 17 00	1st Quality, base 14 % e to 15 % e No. 2
LINING, STOVE.	PAPER.  Roofing.  Mayor, 1-ply	Awning—Jap'd10%	Manila.
LOCKS.	Red Rosinper ton \$111 45	Clothes Line10%	brands17%c to 18%c
Barn Door. No. 60 Stearnsper doz. \$12 00 No. 80 "24 00	Sand and Emery. No. 1 per ream, best grade \$5 40	Hay Fork.  Iron Wheel, 5-in, per doz. \$2 50	Hardware Grade, per lb. 12%e
MACHINES	No. 1, per ream, cheaper grade 4 35	Iron Wheel, 5-in. per doz. \$2 50 Wood Wheel, 6-in. " 3 65 Wood Wheel, 6-in., pass knot " 3 00	per lb17% c to 18% c Hardware Grade, per lb. 11% c
Riveting. Stearns No. 1per doz. \$16 00	Potato.		Hardware Grade, per lb. 11%c
No. 50 Peace's Spoke, each \$16 00	Goodell's Saratoga, 5 in.,	Sash, CommonNet	Butchers'.
Carpenters'.	PICKS.	Common Net Common Sense, 2-in Net Empire Pattern, 2-in Net Ideal Net Steel Net	Atkins No. 2, 14-in \$12 26  " No. 2, 18-in 13 76  " No. 7, 16-in 15 26  " No. 2, 22-in 15 25  " No. 7, 20-in 17 30  " No. 7, 24-in 19 35  " No. 7, 24-in 21 46
Fibre Head No 2 per doz \$16 60	Adze Eye Ore	SteelNet	No. 7, 16-in 15 20 No. 2, 22-in 15 25
No. 3 19 50 No. 4 28 50 Round Hickory	Plumbs, Railroad22 1/4 % Surface	PUMPS.	No. 7, 20-in
Tinners'.  Hickoryper doz. \$2 25	PINCERS.	Midget Juniorper doz. \$3 75 New Misty 6 00	No. 7, 28-In 21 40 Compass.
MATS.	PINCERS.  Carpenters, cast steel, No 6 8 10 12  Each \$0 56 0 72 \$0 93 \$1 98	Crescent " 6 50	No. 10, 10-in 5 10
Deer. National Rigid5&10&5%	Blacksmiths', No. 10\$0 96 Heller'sList plus 10%	Conductors.	" No. 7, 20-in
Acme Steel Flexible50%	PINS	Machineper doz. \$3 00	Atkins No. 221, 4-ft 2 70
MEASURES. Galvanized, dozNets Japanned, dozNets	Clothes. Common, per box of 5 gro. \$0 95	Saddlers'. Commonper doz. \$1 50 to \$5 00	Atkins No. 221, 4-ft 2 70 "No. 221, 6-ft 4 10 "No. 221, 8-ft 5 46
MITRES.	Fluted, 15-inper doz. \$1 10	Revolving Spring.	Atkins No. 96, 16-in 19 95
Galvanized steel mitres, and caps, end pieces, outlets30%	Fluted, 15-inper doz. \$1 10 Fluted, 21-in 1 60 Spiral 1 90	Stearns, No. 10. per doz. \$ 8 00 " No. 40. " 16 00 " No. 60. " 19 00 Parker Metal Punch No.	Hand and Din
MilcorNet	Conductor.  Plain Round and Round Corru-	Parker Metal Punch No.	No. 54, 26-in 22 10
Cotton, Star (Cut Ends).  Pounds 12' 15' 18' 24'-3-0z.  Per doz. \$4 00 4 35 5 50 7 00  Enterprise	mated	Whitney's Ball BearingPrices on application	Atkins No. 54, 20-in. 17 75  "No. 54, 26-in. 22 16 "No. 53, 16-in. 16 45 "No. 53, 20-in. 20 86 "No. 53, 24-in. 24 28 "No. 53, 24-in. 28 60 "No. 53, 28-in. 38 60 "No. 53, 30-in. 31 95
Per doz. \$4 00 4 35 5 50 7 00 Enterprise	29 Gauge	PARERS.	" No. 53, 28-in 28 60 " No. 53, 30-in 21 95
Out Steel\$4 45	26		Keyhole.
Cut Iron 4 45	Octagon.	Goodell'sper doz. \$10 80 Turntable 11 40 White Mountain 8 40 Reading No. 78 11 40	Atkins No. 1, complete. 2 36 No. 2, complete. 3 36 Miter Box.
Wire. Common	28 **	Reading No. 78 " 11 40 PUTTY.	Atkins No. 1, 4x20 29 70  No. 1, 5x22 24 55  No. 1, 6x22 38 35
Small Lots 2 65	Prices for Galvanized Toncan	Commercial Putty, 100-lb.	
Ausable	Metal, Genuine O. H. Iron, Lyon- more Metal and Keystone C. B.	kits\$4 75 RAKES.	Atkins No. 20, 12-in 7 70 No. 10, 16-in 16 56
Horseshoe.	on application. Stove. Per 100 joints	Garden Per doz.	Wood. Atkins No. 202 8 50
Star	26 gauge, 5 inch E. C. nested	Mellechle Iron 12-in " 4 75	No. 318 10 05 No. 906 16 65
Brads	26 gauge, 6 inch E. C. 26 gauge, 7 inch E. C.	Malleable Iron, 14-in. " 5 00	" No. 1509 18 40
NETTING, POULTRY.	nested	Wood, 10 Teeth\$4 00	SCOOPS Hubbard Western Pattern Riveted.
Galvanized before weaving50% Galvanized after weaving40%	28 gauge, 6 inch E. C.	Lawn.	Size A B C D 1. \$16 75 16 00 15 25 14 45 4. 17 85 17 10 16 25 15 60 6. 18 65 17 85 17 10 16 35
NIPPERS.  End Cutting.  Berg's (Swedish) In. 5. 6	28 gauge, 7 inch E. C.	RAZORS—SAFETY.	6 18 65 17 85 17 10 16 35
Per dozen\$12 60 15 20	20 gauge, 5 inch E. C.	Gilletteper doz. \$45 00 Auto Strop 45 00	SCRAPERS.
End and Diagonal Cutting.  Berg's (Swedish) In. 5 6  Per dozen\$10 65 13 00	nested	Gem (3 doz. lots) " 8 40	Triangular No. 6 per doz. \$6 25
Hoof.	nested	Ever Ready ** 8 40 Ever Ready (3 dz. lots) ** 8 00	Cubic ft 7 5 3 With runners,ea. \$7 00 6 50 6 20
Heiler's	T-Joint Made up. 6-inch per 100 35 00	RAZORS-STRAIGHT.	SCREEN DOOR HINGES.
Hose.	Furnace Pipe. Double Wall Pipe and Fit-	RAZOR STROPS.	Cast irongross \$13 00 Steel 9 50
Magicper doz. \$9 50 Diamond 8 75	Single Wall Pipe, Round	Star (Honing)50% REGISTERS.	SCREWS.
Chase Pattern. Brass and Copper18%	Galvanized and Back Iron	Cast Iron	Bench. Iron, Ins. 1 11/2 1 11/2 \$6 82 7 87 9 45 16 30
Zinc	Pipe, Shoes, etc40-10% Milcor, galvanizedNet	Adjustable Ceiling Ventilators 40%	Wood, white maple, per doz. 5 40
Coppered33 % %	Stanley Iron BenchNet	Register Faces—Cast and Steel Japanned. Bronzed and Plated.	Hand—Wood
Copper Plated50-10-5%	V. & B. No. 6each \$0 57	Large Register Faces Cast,	Jack30%
Can.	V. & B. No. 6each \$0 57 No. 7 Gas 0 60 Double Duty 106. 0 56	Large Register Faces—Cast, 14x14 to 38x4260% Large Register Faces—Steel, 14x14 to 38x4260%	Lag or Coach—all sizes, gimlet pointed60%
Delmonicoper doz. \$1 30 Never Slip "65	Lineman's Side Cutting.	RIDGE ROLL,	Saw—Centennial, Nos
V. & Bper doz. \$7 25-11 00	Berg's (Swedish), In. 6 7 8	Galvanized. Crated70-25%	
Cream.	Blk. Pol. Face, doz\$10 70 20 00 23 35	Crated	Wood. F. H. Bright
14-qt. without gauge,per doz. \$9 50	Long Nose Side Cutting. Berg's (Swedish) In. 5 6	RINGS AND RINGERS.	F. H. Brass77 & 30%
	Blk. Pol. Face, doz. \$12 25 15 20	Conner 24-in. 3-in.	Sheet Metal
per doz. 11 75	Berg's (Swedish) Flat, In. 4 6 3 Blk. Pol. Face, Doz	Per dos\$2 40 \$2 65 Rea's Improved Self- Piercing copper,	No. 7, 4x4, per gross. \$ .55 No. 10, 4x2/16 per gross75 No. 14, 4x4 per gross96
10-qt., IC Tinper doz. \$4 00	Bik. Pol. Face, Doz\$8 90 13 35 19 65 Berg's (Swedish)	Steel, per doz 1 50 1 80	W. 118 . A. 17 . 17
Btock	Round, In. 4 6 8 Blk. Pol. Face	Fruit Jar.	Clipper, Grassper doz. \$13 50 Honest Dutchman 13 00
Per doz.\$9 75 10 75 12 75 14 50	Doz\$11 15 16 30 22 35	Whiteper lb. 80	Honest Dutchman 15 44

SETS.	Axe.	ADVERTIS	ERS' INDEX
Nail. Square headper doz. 1 86 Cup point, knurled1 76	Hindostanper lb. New Nets More Grit		cates that the adver-
	TY BERLEVEN	discount door not	appear in this issue.
Farmers'	· Arkaness Hard	American Brass Co	Kruse Co
Atkins No. 10per doz. \$3 86 No. 12 Disston's Monarch	No. 7 per doz. New Nets Arkansas Soft "Washita No. 717 "	American Furnace Co — American Rolling Mill Co — American Steel & Wire Co 51	Lovell Mfg. Co.
No. 2 9 90	OII—Unmounted.	Ashton Mfg. Co	Majestic Co
No. 2 9 90  Disston's Monarch No. 12 13 20  Leach's 8  Nash's Hand 3 15  Nash's X-Cut 4 20		Auto Wheel Coaster Co., Inc.,	Manny Heating Supply Co
Nash's Hand 3 15 Nash's X-Cut 4 30	Lily White " " Queer Creek " " Washita "	The	Marshalltown Mfg. Co — Matthews Banner Range Co. —
Stillman's Lever	Sevthe.	Bernz Co., Otto	Melbye Bros. Co
Whiting Pattern, No. 21 7 50	Black Diamond per gro. New Nets Crescent Green Mountain	Bullard & Gormley Co 48	Messenger & Parks Mig. Co — Meyer & Bro. Co., F
Nash's X-Cut	Extra Oninne-	Burton Co. W. J.  Carr Supply Co. 3 Chicago Solder Co. 45 Clark & Co., Geo. M. — Clark-Smith Hardware Co. 46	Messenger & Parks Mig. Co. —  Meyer & Bro. Co., F —  Meyer Furnace Co —  Meyers Mig. Co., Fred J
Pattern " 14 50	Red End "	Clark & Co., Geo. M	Milwaukee Corr. CoBack Cover Monroe Fdy. & Furnace Co
SHEARS. Per Doz.	STOPS, BENCH.	Cleveland & Buffalo Transit Co. 47	
Nickel Plated, Straight, 6" \$12 90 7" 14 35 8" 16 80 Japanned, Straight 6" 11 90 7" 12 40 8" 13 80	No. 10 Morrill pat- tern per dos. \$11 00 No. 11 Stearns pat-	Cleveland Castings Pat. Co 9 Clinton Furnace Stove Co Coes Wrench Co	Orbon Stove Co
Japanned, Straight 6" 11 00	tern	Co-operative Phy. Co	Peck, H. E 43
1 .1 . " "8" 13 80	STOPPERS, FLUE.	Copper and Brass Research  Association	Quick Meal Stove Co 46 Quincy Pattern Co 9
SHEAVES, SLIDING DOOR.	Commonper doz. \$1 10	Curfman Mfg. Co., F. L 43	Ross-Gould
Inches\$1 40 1 75 2 40	Gem, flat, No. 3 " 1 00 Gem, No. 1 " 1 10	Dieckman Co., Ferdinand 44 Diener Mfg. Co., Geo. W 46	Schwab & Sons Co., R. J
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Zinc (Illinois)\$15 00	Malleable Iron 70 Perfection 6 30 King 4 50	Fanner Mfg. Co — Farquhar Furnace Co — Farris Furnace Co —	Stearns Register Co. 10 St. Louis Tech Inst. 43 St. Louis Heating Co. 43 Sulliyan-Gieger Co. 43
Conductor60%	Wire.	Forest City Fdy. & Mfg. Co. 2	Sykes Co., The
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Coal. Hubbard's No. A B C D	SWIVELS.  Malleable Ironper lb. \$0 10	Farquhar Furnace Co. — Farris Furnace Co. — Federal Varnish Company. 49 Forest City Fdy, & Mfg. Co. 2 Frox Furnace Co. — Friedley-Voshardt Co. 46 G. & O. Mfg. Co. — 47 Gohmann Bros. & Kahler. — Hall-Neal Furnace Co. — Harrington & King Pfg Co. 45 Hart & Cooley Co. 7	Turner Brass Works 7 Tuttle & Bailey Mfg. Co 7 Union Steel Products Co., Ltd. —
No. \$10 00 15 10 14 45 13 70 2 16 25 15 60 14 85 14 10 3 16 75 16 00 16 25 14 45 4 17 10 16 35 16 60 14 85	Wrought Steelper gro. 4 50	Hall-Neal Furnace Co	Vaughan & Bushnell Mfg. Co.
3 16 75 16 00 16 25 14 45 4 17 10 16 35 16 60 14 85	TACKS. Bill Posters' 6-oz., 25-lb. boxes	Hart & Cooley Co	Viking Shear Co
Post Drains & Ditching. Hubbard's	per lb	Heller Bros Co	Vaughan & Bushnell Mfg. Co. — Vedder Pattern Works
	boxes, per lb15%c	Hemp & Co	Whitney Mfg. Co., W. A
Size A B C 14" 17 15 16 40 16 65 16" 17 50 16 75 16 00 18" 17 85 17 10 16 85 20" 18 20 17 45 16 70 22" 18 55 17 80 17 05	TAPES, MEASURING.	Hess-Snyder Co	Zarco Mfg. Co
22" 18 55 17 80 17 05	Asses' SkinList&40% THERMOMETERS.	Hess-Snyder Co. 5 Hollenden Hotel — Hones, Inc., Chas. A. — Hopson Co., W. C. — Hussey & Co., C. G. 45 Hyfield Mfg. Co. 45	
D-Handleper doz. \$3 50 Long Handle " 3 00	Tin Caseper doz. 80c&\$ 1 25 Wood Back " \$2 00& 12 00 Glass " 12 00		Please mention AMERICAN ARTISAN
SKATÉS.		Inland Steel Co	HARDWARE RECORD
Ball Bearing—Boys'\$1 50 Ball Bearing—Girls' 1 60	Bale.	Kimball Bros. Co	when writing to advertisers
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Covered SpringAdd 30% fudd's Pattern Add 33 1-6% to list	car lots70&15%	White Cotton	Carborundum
SNATHS.	Game with Chains, Per doz.	Eureka, 4-plyper lb. 30c Jute.	Well, Ins
Double Ring Bushper doz. \$ 9 75 Patent Loop, Bush " 10 00 Patent Loop, Grass. " 8 75	Victor No. 1	3-ply and 6-ply Bale Lots. 22% c	Per doz\$5 50 7 25 8 50 12-in. heavy holsting,
SNIPS. TINNERS.	Newhouse No. 1 4 88	VALLEY. Formed Valley Galvanized	per doz
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Star	Short Stop Mouse Traps. 3 20 Wood Choker Mouse	VISES.	per 100 lbs\$2 85
SPRINGS, DOOR.	Sure Catch Rat Traps 16 00	No. 700, Hand, Inches 414 5 514	ibs
Nos 2 8 4 5 6 7 Per dox. 45c 50c 55c 65c 80c 90c	Vim Rat Traps 16 00 Short Stop Rat Trap 15 00 Dead Easy Rat Traps 17 00	Inches 4½ 5 5½ Doz\$11 15 13 00 14 85 No. 701. In. 45 6 Doz\$11 15 13 00 16 70 No. 1, Genuine Wentworth,	Cattle Wire—galvanized catch weight spool, per
Reliance. Light Medium Heavy	Star Rat Traps 50 00 Erie 54 00	No. 1, Genuine Wentworth, Noiseless Sawper doz. 15 00	Galvanized Hog wire, 80 red
Per doz\$1 80 2 40 3 75 Torrey'sper doz. 1 65	Packed in One Bushel Band Stave Baskets.	No. 2. Genuine Wentworth.	spool, per spool 3 23 Galvanized plain wire, No. 8, per 100 lbs
SPRINKLERS, LAWN.	List per bushel. Sure Catch Mouse Traps	Noiseless Sawper doz. 22 50 No. 3, Genuine Wentworth, Noiseless Sawper doz. 26 00 No. 500, All Steel Folding	
SQUARES.	(260 Traps) \$ 9 30	Sawper doz. 16 00	WOOD FACES. 50% off list.
SQUARES. Steel and IronNet (Add for bluing, \$3.00 per doz. net)	Short Stop Mouse Traps (260 Traps) 8 00 Sure Catch Rat Traps (54	WASHERS.	WRENCHES.
Mitre	Short Stop Rat Traps (54	Standard O. G. cast iron, per 1b3%c	Coes Steel Handle, 6-in60%
Try and Bevel	Assorted Mouse and Rat Traps.	Wrought steel in 5-lb. boxes, per lb.: In. 3/16 ¼ 5/16 % ¼	10-in 60% 12-in 60% Coes Knife-Handle, 6-in 60%
Fox's per doz. \$6 00 Winterbottom's10%	Sure Catch (216 Mouse Traps and 26 Rat Traps)\$8 50	100 140 120 110 140	8-in60%
STAPLES.	Short Stop (216 Mouse Traps and 26 Rat Traps) 7 50	% % % 1 9%c 9c 8c 8c	Coes All Patterns
Barbedper lb. 21@22c	TROWELS.	Ax. WEDGES. per doz. Nets	Knife Handle Pattern. No. 63, Screw Wrench, List
Butter, Tub " 16@19c	Cement. Atkins No. 6	Gallingper lb. Nets Sawper lb. 84	plus30% No. 60, Steel Handle30%
Polished per 100 lbs. \$5 45 Galvanized 6 15	No. 9 25 50 Disston's 30 %	WEIGHTS,	WRINGERS.
Netting. Galvanizedper 100 lbs. 6 54	TUBS. WASH.	Sash—f. o. b. Chicago.	No. 790, Guarantee, per doz. \$55 50
Wrought, Wrought Staples, Hasps and	Standard, Wood. Ex. Nos 3 2 1 large Per doz. \$9 50 11 25 12 75 15 50	Ton lots, per ton\$36 00 Smaller lots, per ton 37 50	No. 770, Bicycle 52 50 No. 670, Domestic 49 00 No. 110, Brighton 44 00 No. 750, Guarantee 55 50 No. 740, Bicycle 52 50 No. 22, Pioneer 41 00
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Indianapolis, Ind.

Standard Furnace & Supply Co.,
Omaha, Neb.

Heaters-Warm Air. American Furnace Co., St. Louis, Mo. Chicago, Ill. Carr Supply Co., Dunning Heating Supply Co., Milwaukee, Wis. Farquhar Furnace Co., The, Wilmington, Ohio Farris Furnace Co., Springfield, Ill. Forest City Fdy. & Mfg. Co., Cleveland, Ohio Fox Furnace Co., Elyria, Ohio Hall-Neal Furnace Co., Indianapolis, Ind. Haynes-Langenberg Mfg. Co., St. Louis, Mo. Henry Furnace & Fdy. Co., Cleveland, Ohio Hess-Snyder Co., Massillon, Ohio Hess-Snyder Co., Independent Stove Co., Owosse, Mich. Kruse Co., Indianapolis, Ind.

-Warm Air-Continued Lamneck Co., W. E., Columbus, Ohio Lennox Furnace Co., Marshalltown, Iowa Mahoning Fdy. Co., Youngstown, Ohio Manny Heating Supply Co., Chicago, Ill. Meyer Furnace Co., Peoria, Ill. Michigan Stove Co., The, Detroit, Mich. Monroe Fdy. & Furnace Co., Monroe, Mich. Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Illinois Orbon Stove Co., Bellville, Illinois Peerless Foundry Co., Indianapolis, Ind. Scheible-Moncrief Heater Co., Cleveland, Ohio Schwab & Sons Co., R. J., Milwaukee, Wis. Standard Furnace & Supply Co., Omaha, Neb. St. Louis Heating Co., St. Louis, Mo. Utica Reater Co., Utica, N. Y. Waterloo Register Co., Waterloo, Iowa

Herae Shoes.

American Steel & Wire Co.,
Chicago, Ill.

Humidifiers. Haynes, Kansas City, Mo.

Indoor Closet.
Independent Reg. & Mfg. Co.,
Cleveland, Ohio

Jobbers—Hardware.
Bullard & Gormley Co.,
Chicago, Ill.
Clark-Smith Hardware Co.,
Peoria, Ill.

Kitchen Utenalls.

Lalance & Grosjean Mfg. Co.,
Chicago, Ill.

Ladders, Walchli Mfg. Co., St. Louis, Mo.

Lath—Expanded Metal.
Milwaukee Corrugating Co.,
Milwaukee, Wis.

Machines Crimping.
Bertsch & Co., Cambridge City, Ind.

Machinery—Culvert.
Bertsch & Co.,
Cambridge City, Ind.

Machines Razor Blades. Hyfield Mfg. Co., New York, N. Y.

Machines—Stove Pipe. Hemp & Co., St. Louis, Mo.

Machines—Tinsmiths".

Bertsch & Co., Cambridge City, Ind.

Dreis & Krump Mfg. Co., Chicago, Ill.

Ewert & Kutscheid Mfg. Co., Chicago, Ill.

Hemp & Co., St. Louis, Mo.

Maplewood Machinery Co., Chicago, Ill.

Marshalltown Mfg. Co., Chicago, Ill.

Marshalltown Mfg. Co., W. A., Rockford, Ill.

Whitney Metal Tool Co., Rockford, Ill.

Mailing Lists.

Ross-Gould, St. Louis, Mo.

Metals—Perforated.

Harrington & King Perforating
Co., Chicago, Ill.

Miters.

Friedley-Voshardt Co., Chicago, Iil.

Nails—Slating.

Hussey & Co., C. G., Pittsburgh, Pa.

Pittsburgh, Pa.

Nalls—Wire.

American Steel & Wire Co.,

Chicago, Ill.

Ornaments Sheet Metal.
Friedley-Voshardt Co.,
Chicago, Ill.
Gerock Bros. Mfg. Co.,
St. Louis, Me.

Patterns—Furnace and Stove.
Cleveland Castings Pattern Co.,
Cleveland, Ohie
Quincy Pattern Co., Quincy, Iii.
Shaw & Son Co., The Geo, E.,
Cleveland, Ohie
Vedder Pattern Works.
Troy, N. Y.

Pencils.

Eagle Pencil Co., New York, N. Y.

Pipe and Fittings—Furnace.
Carr Supply Co., Chicago, Ill.
Dunning Heating Supply Co.,
Milwaukes, Wis.
Henry Furnace & Fdy. Co.,
Cleveland, Ohio
Lamneck Co., W. E.,
Columbus, Ohio
Manny Heating Supply Co.,
Chicago, Ill.
Meyer & Bro. Co., F., Peoria, Ill.
Osborn Co., The J. M. & L. A.,
Cleveland, Ohio
Standard Furnace & Supply Co.,
Omaha, Neb.

Pipe and Fittings—Stove, Hemp & Co., St. Louia, Me, Meyer & Bro. Co., F., Peoria, Ill. Sullivan-Geiger Co., Indianapolis, Ind.

Pipe—Conductor.

Berger Bros. Co., Philadelphia, Pa.

Burton Co., W. J., Detroit, Mich.
Clark-Smith Hdw. Co., Peoria, Ill.
Dieckmann Co., Ferdinand,
Cincinnati, Ohie
Priedley-Voshardt Co.,
Chicago, Ill.
Hussey & Co., C. G.,
Pittsburgh, Pa.
Lupton's Sons Co., David,
Philadelphia, Pa.
Milwaukee Corrugating Co.,
Milwaukee, Wia.
New Jersey Zinc Co., The,
New York, N. Y.

Polish—Metal and Stove.
Black Slik Stove Polish Works,
Sterling, Ill.

Posts—Steel Fence. American Steel & Wire Co., Chicago, Ill.

Bertsch & Co.,
Cambridge City, Ind.
Whitney Mtg. Co., W. A.,
Rockford, Ili
Whitney Metal Tool Co.,
Rockford, Ill.

Punches—Combination Bench and Hand. Parker Supply Co., New York, N. Y. Whitney Metal Tool Co. Rockford, Ill.

Punches Hand.
Parker Supply Co., New York, N. Y.
Whitney Metal Tool Co., Rockford, Ili.

Quadrants—Damper.
Parker Supply Co.,
New York, N. Y.

Union Steel Products Co., Albion, Mich.

Racks—Stove, Union Steel Products Co., Albion, Mich. Radiator Hoods and Shells—Ford.

Radiator Hoods and Shells—Ford. Messenger & Parks Mfg. Co., Aurora, Ill.

Ranges Combination Gas & Coal. American Stove Co., St. Louis, Me.

Independent Stove Co., Owosso, Mich.

Malleable Iron Range Co., Beaver Dam., Wis.

Matthews Banner Range Co., South Bend, Ind.

Quick Meal Stove Co., St. Louis, Me.

Ranges Gas.

American Stove Co., St. Louis, Me.
Clark & Co., Geo. M., Chicago, Ill.
Dangler Stove Co., Cleveland, O.
Matthews Banner Range Co.,
South Bend, Ind.
Quick Meal Stove Co.,
St. Louis, Mo.

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Rasps. Newark, N. J. Heller Bros.,

Register Shields. Hall-Neal Furnace Co., Indianapolis, Ind.

Registers-Warm Air. Chicago, Ill. Carr Supply Co., Dunning Heating Supply Co., Milwaukee, Wis. Hart & Cooley Co., New Britain, Conn. Henry Furnace & Fdy. Co., Cleveland, Ohio Majestic Co., Huntington, Ind. Manny Heating Supply Co., Chicago, Ri. Rock Island Register Co., Rock Island, Ill. Standard Furnace & Supply Co., Omaha, Neb. Stearns Register Co., Detroit, Mich. Tuttle & Bailey Mfg. Co., Chicago, Ill. Walworth Run Fdy. Co., Cleveland, Ohio Waterloo Register Co., Waterloo, Iowa

Begulators-Damper. Parker Supply Co., New York, N. Y.

Bepair Parts-Auto Radiator. Curfman Mfg. Co., F. L., Maryville, Mo. G. & O. Mfg. Co., New Haven, Conn.

Repairs—Stove & Furnace. Hessler Co., H. E., Syracuse, N. Y.

Rideing.

American Rolling Mill Co., Middletown, Ohio

Rivets-Stove.

Kirk-Latty Mfg. Co., Cleveland, Ohio

Lalance & Grosjean Mfg. Co., Chicago, Ill.

Rod Clips-Damper.

Parker Supply Co., New York, N. Y.

Rods-Stove

Rirk-Latty Mfg. Co., Cleveland, Ohio

Rells-Forming.

Bertsch & Co., Cambridge City, Ind.

Roof-Flashing

Hemsler Co., H. E., Syracuse, N. Y.

Recting-Iron and Steel. American Rolling Mill Co., Middletown, Ohio Burton Co., W. J., Detroit, Mich. Cortright Metal Roofing Co., Philadelphia, Pa. Friedley-Voshardt Co., Chicago, Ili. Milwaukee Corrugating Co., Milwaukee, Wis. Osborn Co., The J. M. & L. A., Cleveland, Ohio Inland Steel Co. Chicago, Ill .. Sykes Co., The Chicago, Ill.

Illinois Zinc Co., New York, N. Y. New Jersey Zinc Co., The, New York, N. Y.

Rubbish Burners. Hart & Cooley Co., New Britain, Conn.

Atkins & Co., Inc., E. C., Indianapolis, Ind.

Schools—Sheet Metal Trades. Zideck School of Sheet Metal Trades, New York, N. Y.

Schools—Sheet Metal Pattern Drafting.

St. Louis Technical Institute, St. Louis, Mo. Zideck Auto Radiator School, New York, N. Y.

Schools-Automobile Radiator Repairing. Zideck Auto Radiator School, New York, N. Y.

Screens-Perforated Metal. Harrington & King Perforating Co., Chicago, Ill.

Screws-Sheet Metal. Parker Supply Co., New York, N. Y.

Screw Drivers. North Bros. Mfg. Co.,

Shears-Hand and Power. Philadelphia, Pa. Ewert & Kutscheid Mfg. Co., Chicago, Ill. Marshalltown Mfg. Co., Viking Shear Co., Erle, Pa.

Sheets-Asbestos Manny Heating Supply Co., Chicago, Ill.

Sheets-Black and Galvanized. American Rolling Mill Co., Inland Steel Co., Chicago, Ill. Osborn, The J. M. & L. A., Cleveland, Ohio Sykes Co., The, Chicago, Ill.

Sheets-Iron American Rolling Mill Co., Middletown, Ohio

Shields-Radiator.

Thomas & Armstrong Co., The London, Ohio

Shingles-Zinc.

Illinois Zine Co., New York, N. Y.

Sifters

Diener Mfg. Co., G. W., Chicago, Ill.

Sifters-Flour. Meyers Mfg. Co., Fred J., Hamilton, Ohio

Sky Lights.
Burton Co., W. J., Detroit, Mich.
Messinger & Parks Mfg. Co.,
Aurora, Ill. Sykes Co., The, . Chicago, Ill.

Sleds.

Auto-Wheel Coaster Co., No. Tonawanda, N. Y.

Smoke Pipe-Cast Iron. Smoke Fipe Manny Heating Supply Co., Chicago, Ill. Waterloo Register Co., Waterloo, Iowa

Solder.

Chicago Solder Co., Chicago, Ill.

Soldering Furnaces Ashton Mfg. Co., Newark, N. J. Bernz Co., Otto, Newark, N. J. Burgess Soldering Furnace Co., Columbus, Ohio Clayton & Lambert Mfg. Co., Detroit, Mich. Diener Mfg. Co., G. W., Chicago, Ill. Double Blast Mfg. Co., North Chicago, Ill. Hones, Inc., Chas. A., Baldwin, Long Island, N. Y. Quick Meal Stove Co., St. Louis, Mo. Turner Brass Works, Sycamore, Ill. Specialties Hardware,

Atkins & Co., Inc., E. C., Indianapolis, Ind. Bullard & Gormley, Chicago, Ill. Diener Mfg. Co., G. W., Chicago, Ill. Hardware Specialty Co., Fort Wayne, Ind. Heller Bros. Co., Newark, N. J. Hessler Co., H. E., Syracuse, N. Y. Hyfield Mfg. Co., New York, N. Y. Lovell Mfg. Co., Parker Supply Co., New York, N. Y. Vaughan & Bushnell Mfg. Co., Chicago, Ill. Walchli Mfg. Co., St. Louis, Mo.

Sporting Goods.

Bullard & Gormley, Chicago, Ill.

Stains-Oll and Acid. Federal Varnish Co. Chicago, Ill.

Stars-Hard Iron Cleaning. Fanner Mfg. Co., Cleveland, Ohio

Friedley-Voshardt Co., Chicage, Ill. Gerock Bros. Mfg. Co., 8t. Louis, Mo.

Stoves-Camp.

Quick Meal Stove Co., St. Louis, Mo. Union Steel Products Co., Albion, Mich.

-Gasoline and Kero American Stove Co., St. Louis, Mo. Clark & Co., Geo. M., Chicago, Ill. Dangler Stove Co., Cleveland, O. Quick Meal Stove Co., St. Louis, Mo.

Stoves and Ranges.

American Stove Co., St. Louis, Mo. Clark & Co., Geo. M., Chicago, Ill. Clinton Furnace Stove Co., Clinton, Ind. Copper Clad Malleable Range Co., St. Louis, Mo. Dangler Stove Co., Cleveland, O. Gohman Bros. & Kahler, New Albany, Ind. Independent Stove Co., Owosso, Mich. Jungers Stove & Range Co., Grafton, Wis. Malleable Iron Range Co., Beaver Dam, Wis. Michigan Stove Co., The, Detroit, Mich Orbon Stove Co., Belleville, Ind. Quick Meal Stove Co., St. Louis, Mo.

Stove Pipe Reducer. Sullivan-Geiger Co., Indianapolis, Ind.

Tacks, Staples, Spikes. American Steel & Wire Co., Chicago, Ill.

Tiles and Shingles-Metal. Burton Co., W. J., Detroit, Mich. Cortright Metal Roofing Co., Philadelphia, Pa. Hopson Co., W. C., Grand Rapids, Mich Illinois Zine Co., New York, N. Y. Milwaukee Corrugating Co., Milwaukee, Wis. Thomas & Armstrong Co., The, Lendon, Ohio

Tinplate.

Osbern Co., The J. M. & L. A., Cleveland, Ohio

Tin-Perforated. Marrington & King Perforating Co., Chicago, Ill.

Tools-Aute Repair. Curfman Mfg. Co., F. L., Maryville, Mo.

Tools-Carpenter. Atkins & Co., Inc., E. C., Indianapolis, Ind. Vaughan & Bushnell Mfg. Co., Chicago, Ill.

Tools—Tinsmith's.

Bertsch & Co., Cambridge City, Ind. Dreis & Krump Mfg. Co., Chicago, Ill. Ewert & Kutscheid Mfg. Co., Chicago, Ill. Hopson Ce., W. C., Grand Rapids, Mich. Maplewood Machinery Co., Chicago, Ill. Marshalltown Mfg. Co., Marshalltown, Iowa Osborn Co., The J. M. & L. A.,, Cleveland, Ohio Vaughan & Bushnell Mfg. Co., Chicago, Ill. Viking Shear Co., Viking Shear Co., Whitney Mfg. Co., W. A., Rockford, Ill Whitney Metal Tool Co., Rockford, Ill.

Torches.

Ashton Mfg. Co., Newark, N. J. Bernz Co., Otto, Newark, N. J. Burgess Soldering Furnace Co., Columbus, Ohio Clayton & Lambert Mfg. Co., Detroit, Mich. Diener Mfg. Co., G. W., Chicago, Ill. Double Blast Mfg. Co., North Chicago, Ill. Hones, Inc., Chas. A., Baldwin, Long Island, N. Y. Quick Meal Stove Co., St. Louis, Mo. Turner Brass Works, Sycamore, Ill.

Transit Companies. Cleveland & Buffalo Transit Co., Cleveland, Ohio

Trimmings—Steve.

Valves-Humidifier. Kansas City, Mo.

Varnishes.

Cornish & Co., J. B., Chicago, Ill. Federal Varnish Co., Chicago, Ill.

Ventilators. Berger Bros. Co., Philadelphia, Pa. Friedley-Voshardt Co., Chicago, Ill. Messenger & Parks Mfg. Co., Aurora, Ill. Milwaukee Corrugating Co., Milwaukee, Wis. Standard Ventilator Co., Lewisburg, Pa. Thomas & Armstrong Co., The.

Ventilators-Ceiling.

Hart & Cooley Co., New Britain, Conn. Henry Furnace & Fdy. Co., Cleveland, Ohio Tuttle & Bailey Mfg. Co., New York

Wagons-Auto-Wheel. Auto-Wheel Coaster Co., No. Tonawanda, N. Y.

Water Heaters-Oil Burning. Dangler Stove Co., Cleveland, O.

Wire. American Steel & Wire Co., Chicago, Ili.

Wrenches.

Coes Wrench Co., Worcester, Mass.

Wringers-Bris. Pa. Lovell Mfg. Co.,

Illinois Zinc Co., New York, N. Y. New Jersey Zine Co., The, New York, N. Y.

Illinois Zinc Co., New York, N. Y.

### WANTS AND SALES

For paid yearly subscribers, AMERICAN ARTISAN AND HARDWARE RECORD will insert under this head advertisements of not more than fifty words WITHOUT CHARGE. Employers wishing to secure employes, parties desiring to purchase or sell business, secure partners, or to exchange, etc., will find that these pages offer excellent opportunities to satisfy their wants. Clerks and tinsmiths looking for situations will find it to their advantage to use these columns. Those who respond to these announcements please mention that they "READ THE ADVERTISEMENT IN AMERICAN ARTISAN AND HARDWARE RECORD."

### **BUSINESS CHANCES**

Lightning Rods—Sell our famous Copper Cable and Section Rods—endorsed and labeled by Underwriter's Laboratories. Special Patented One Piece Air Terminals—and many other exclusive features with Rock Bottom Prices. Don't do all the hard work and let your competitor put on the rods. Write today for agency. L. K. DIDDIE CO., Marshfield, Wis.

Business Chances—Hardware and sheet metal men who are free to go into a new thing, will find it profitable to write for particulars. Address Zarco, 407 East 91st Street, New York, N. Y. 2-3t

For Sale—Plumbing and tin shop good location on main street, only shop in town. Tools and stock will invoice about \$1,000. For further information write R. A. Muxen, Doland, South Dakota. 4-3t

Wanted—Stock of hardware about \$6,-000. I have 80 acres unimproved farm near Wadena, Minnesota, as part payment. Balance cash. Minnesota preferred. Address August Ebert, Truman, Minnesota. 3-3t

For Sale—Warm Air Heating and Sheet Metal Business. Established 10 years A live proposition for little money. Situated on one of Chicago's best streets. Address B-55, .care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

For Sale—Good going hardware business in town of 1,500 population in Northern Illinois. Last year business \$22,000. Stocks and fixtures about \$8,000, will reduce to suit purchaser. For particulars write B-51, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

For Sale—Portable Bake, Japanning and Enameling Oven business; also sheet metal works: Established 35 years, 20 years at present location. Ovens sold all over the United States. Best chance for live party. Address B-43, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 5-1t

For Sale—Warm air heating and sheet metal business, established 20 years. A live proposition for one or two first class men to acquire whole or half interest. Have large furnace repair trade. First class machinery. Located in largest city South, having 450,000 inhabitants. For particulars: address B-52, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 4-3t

For Sale—Good sheet metal and roofing shop with full equipment for handling No. 40 and lighter fron. Best town in East Central Illinois. Lots of building here. Fine opportunity for party or parties used to running a large shop. Will:inyolog from \$5.000 to \$7.000. Reason for selling, disagreement of partners. Have been established 12 years. Address B-44, care AMERICAN ARTISAN, 620 South Michigan Avenue. Chicago. 1-3t

### **BUSINESS CHANCES**

For Sale—First class sheet metal radiator and oxy-acetylene welding shop, fully equipped. Always plenty of work. Reason for selling, poor health. Will invoice about \$1,800. Address B-48, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 3-1t

For Sale—Tin and radiator repair shop, plenty of work, good country. Only shop in town. Must sell at once on account of other business. Good tools, some new. 9 miles to nearest town. \$300 cash takes it including stock and tools. A real bargain. Earl Poorman, Fulton, Indiana. 3-3t

Business Chances—We will rent one-half of our sales room to a reliable party who wishes to put in a stock of Sporting Goods. Best location in the city of 38,000 population. Very little competition. Write for particulars. Address B-45, Care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

### HELP WANTED

Wanted—Three good furnace installers needed. Steady work. Campbell Heating Co., Des Moines, Iowa. 4-3t

Wanted—Tinner and furnace man. Must be willing to work. Good wages for right man. Call or write, 129 State Street, Wauwatosa, Wisconsin. 3-3t

Wanted—Job shop tinner, also blow pipe men and warm air furnace men. 90c per hour. Union shop. No labor trouble. Mohr-Jones Hardware Company, Racine. Wisconsin. 4-3t

Wisconsin.

Wanted—Two first class sheet metal workers for inside work on furnace fittings. Steady work to the right kind of men. Hero Furnace Company, Sycamore. Illinois.

3-3t

Wanted—A good tinner to do repair work in shop and help in hardware shop. Good job for elderly man on outside work, steady job for right man. Address B-49, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 3-1t

Wanted—Tinner, one who can work from blue prints, on ventilating ducts and do furnace work. Small town 15 miles from Fort Wayne, Indiana, good ake 2 miles out. State wages and hours in first letter. Churubusco Tin and Cornice Works, Churubusco, Indiana. 3-3t

Wanted—By August 15th, or September 1st, experienced furnace man for pipe and pipeless furnace work. One that can figure jobs and make up finished material. Give reference and salary expected in first letter. Address Huron Furnace Company, Huron, South Dakota.

Wanted—Several men for metal work, making chick drinking fountains, more or less experienced in galvanizing work, also one man capable of doing tin, furnace and plumbing work. Married man not over 35 preferred. Steady employment. Please write G. T. Mueller and Son, Columbus, Wisconsin.

### SITUATION WANTED

Situation Wanted—By tinner and furnace man, have had ten years' experience, married and want steady employment. State wages and particulars in first letter. Address J. H. Dennick, 345 West 2nd Street, Spencer, Iowa. 4-3t

Situation Wanted—By radiator repair and construction man with 8 years' experience. Also understands warm air furnace, plumbing and general sheet metal work. Address B-53, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Ill.

Situation Wanted—Experienced hardware man with family wants position in retail hardware store as manager, as sistant or salesman. Best references as to reliability and capability. Address B-50, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois. 3-1t

### SITUATION WANTED

Situation Wanted—By tinner and furnace man, also do ordinary plumbing. Have had 15 years' experience. Married, 39 years old. Can furnish best of references. State wages in first letter. Address B-54, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

Situation Wanted—By an all around man with 20 years' experience at plumbing, hot water, steam, warm air heating, and in and outside tin work. Am 38 years old and married. Carry an Illinois license. Would like a steady position. Address B-47, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.

### TINNERS' TOOLS

Wanted—To buy a set or part of set of Tinners Tools. Must be in good working order and cheap. Geo. E. Ainsworth, 59 West Locust Street, Canton, Illinois. 4-3t

Wanted—To Buy—One 8 foot brake and one No. 2 Whitney Lever Punch in good condition, for cash. H. A. Duncan, 726 North Ervay Street, Dallas, Texas. 3-3t

For Sale—1-8 foot B & K Cornice Brake, \$85; 1-No. 2 Niagara Beader, 10" Throat, geared, 3 pair rolls with std., \$30; 1-large Niagara Turner, 2 sets faces with std., \$22; 1-large Burring Machine P. S. & W., \$18, with std.; 1-small Burring Machine, Niagara, with std., \$16; 1-geared crimper and beader std., 2 set rolls, \$20; 1-30" Forming Rolls, \$10; 1-30" adj. Niagara Bar Folder, \$30. These machine tools have had very little use and are as good as new. Write E. R. Huston, Willard, Ohio.

### BOOKS

Wanted—Tinsmiths and sheet metal workers to get acquainted with two of the best books ever written for them. You don't like to read dry stuff that is uninteresting and hard to understand. That's where these books shine. They tell you what you want to know and in a style you like. They give you all the "Kinks" of the trade. Volume 1 has 119 pages and about 100 illustrations. Vol. 2 has 120 pages and 114 illustrations, and has special articles on repairing automobiles and erecting metal ceilings. These books are small and easily fit in your pocket. The "Kinks" books are durably bound in cloth and sell for \$1.00 each. All books postage prepaid. No books exchanged. Ask for a copy of our new 10-page book catalog. AMERICAN ARTISAN, 620 South Michigan Boulevard, Chicago, Illinols.

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### STOVE SALESMAN WANTED

Foundry located on Mississippi river: Address D-28, care of AMERICAN ARTISAN, 620 South Michigan Avenue, Chicago, Illinois.